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# Rural Manufacturing at a Glance, 2017 Edition



## Overview

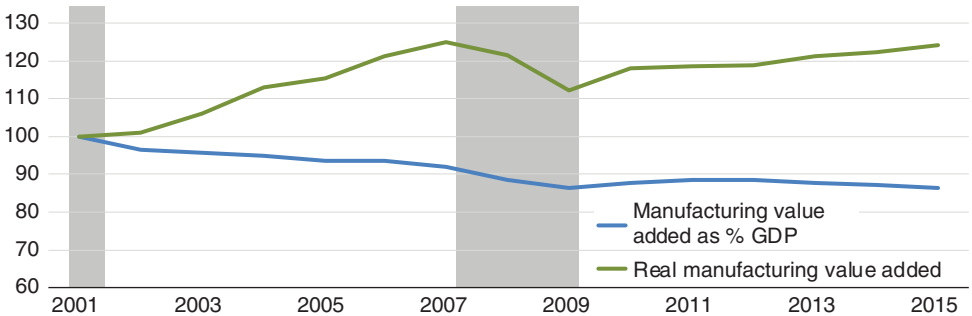
Despite declining rural manufacturing employment between 2001 and 2015, the manufacturing sector is relatively more important as a source of employment and earnings to the rural economy than it is to the urban economy. While manufacturing remains concentrated in the Eastern United States, employment has declined in most counties in this region. Rural manufacturing employment and wages vary among the 21 subsectors that comprise the manufacturing sector, with food manufacturing being the largest and also having relatively stable employment levels before, during, and after the recession. Average rural manufacturing wages also varied by subsector, being lowest for textile product/apparel manufacturing and highest for energy products/chemical manufacturing. This report examines the health of the rural manufacturing sector, including employment and wages for various manufacturing industries, during a period that includes a longstanding decline in manufacturing employment and the aftermath of two recessions.

## Nationally, manufacturing “value added” is back to pre-recession levels but continues to decline as a percentage of gross domestic product

Despite facing pressures from a variety of factors—including increased global competition and technological change—the U.S. manufacturing sector has exhibited steady growth in value added since 2009. By 2015, value added had returned to levels observed in 2007 (fig. 1), just before the Great Recession that began in the fourth quarter of 2007. As a percentage of gross domestic product (GDP), however, manufacturing value added has generally declined since peaking in 1953 at 28 percent. As a percentage of GDP, manufacturing value added declined from 14 percent in 2001 to 12 percent of GDP in 2015.

Figure 1  
**Real manufacturing value added is growing, but shrinking as a percentage of gross domestic product**

Change in U.S. manufacturing value added and value added as a share of GDP (2001=100)



Note: Gray background indicates recessionary periods.

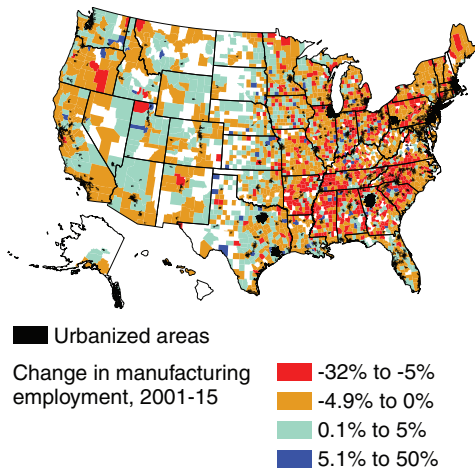
Source: USDA, Economic Research Service analysis of Bureau of Economic Analysis, Industry Economic Accounts Directorate data.

## Manufacturing employment is concentrated in the Eastern United States and has declined in most of these counties

The 29 percent of counties with manufacturing employment growth from 2001 to 2015 are spread throughout the country, but the majority of these counties had low levels of growth relative to total employment (fig. 2). Counties with the largest relative declines in manufacturing employment are concentrated in the Eastern United States.

Despite growth elsewhere, manufacturing employment remains concentrated in both the so-called manufacturing belt (around the Great Lakes) and across much of the South (fig. 3). Almost 20 percent of manufacturing jobs in 2015 were located in rural (nonmetropolitan) counties.

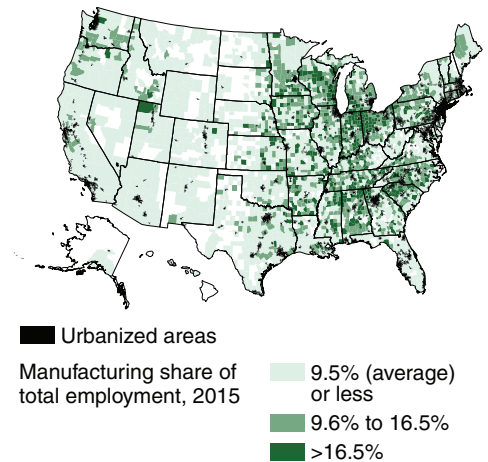
Figure 2  
**Manufacturing employment declined in most Eastern counties between 2001 and 2015**



Note: Counties in white have either missing or undisclosed data for either 2001 or 2015. Alaska and Hawaii not geographically representative.

Source: USDA, Economic Research Service analysis of Bureau of Economic Analysis, Regional Economic Information System data.

Figure 3  
**Manufacturing employment was still concentrated in the Eastern United States in 2015**



Note: Counties in white have either missing or undisclosed manufacturing employment data for 2015. Alaska and Hawaii not geographically representative.

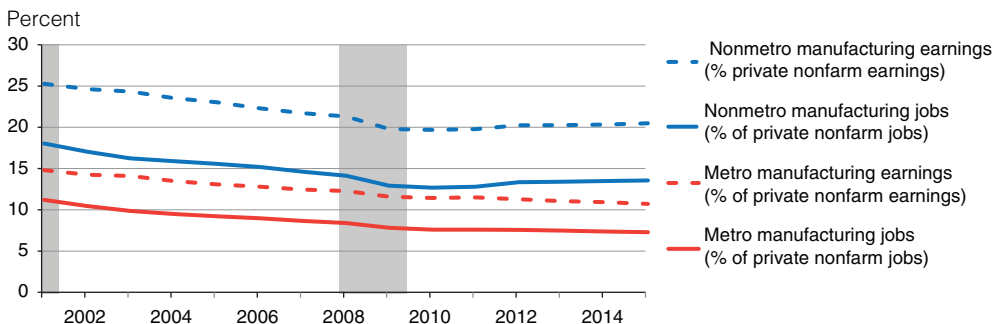
Source: USDA, Economic Research Service analysis of Bureau of Economic Analysis, Regional Economic Information System data.

## Manufacturing is more important to the rural economy than it is to the urban economy

Manufacturing provides a higher share of jobs and earnings in rural (nonmetropolitan) areas than in urban (metropolitan) areas (fig. 4). Despite declining manufacturing employment and earnings, the sector was still responsible for 21 percent of rural private nonfarm earnings and 14 percent of rural private nonfarm jobs in 2015. By comparison, in urban counties, manufacturing represented 7 percent of private nonfarm jobs and 11 percent of private nonfarm earnings in 2015<sup>1</sup>. Rural manufacturing jobs were nearly equal to rural retail jobs, almost two times rural construction jobs, and almost five times rural mining jobs in 2015.

Figure 4  
**Manufacturing jobs and earnings are a higher share in nonmetro than metro counties**

Manufacturing share of private nonfarm full- and part-time jobs and earnings



Note: Gray background indicates recessionary periods.

Source: USDA, Economic Research Service analysis of Bureau of Economic Analysis, Regional Economic Information System data.

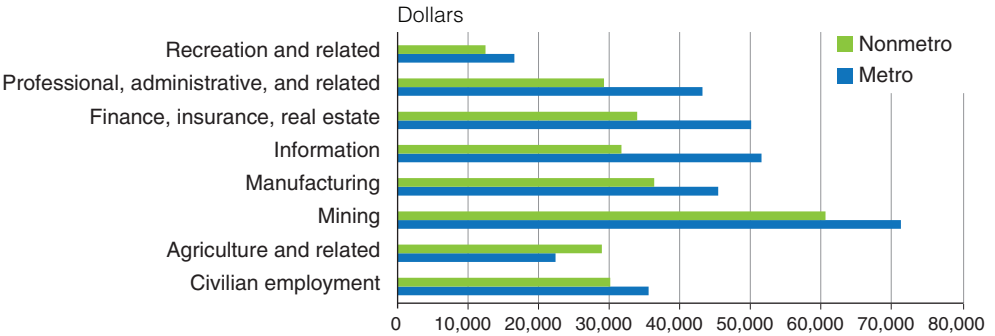
<sup>1</sup>Manufacturing jobs accounted for 11 percent of total jobs (including farm and government) in rural America in 2015; manufacturing jobs accounted for 6 percent of total jobs in urban counties in 2015.

Despite the relative importance of manufacturing to the rural economy, economic restructuring is altering job opportunities for rural areas of the country as demand for services grows. Rural manufacturing employment was smaller both in relative and absolute terms in 2015 than in 2001—there were 21 percent fewer manufacturing jobs while total rural employment grew almost 7 percent; that is, manufacturing employment became a smaller piece of a larger pie. During the same period, jobs in producer services increased by 27 percent, accounting for almost 20 percent of rural private nonfarm jobs in 2015.

Rural median earnings are higher in manufacturing and mining than in other sectors (fig. 5). However, manufacturing is more important to the rural economy than mining because it is responsible for a greater share of total rural employment (14 percent versus 3 percent of private nonfarm rural employment).

Figure 5

### Nonmetro median earnings were highest in mining and manufacturing in 2015



Note: Values in 2015 inflation-adjusted dollars. Values reflect earnings for the past 12 months for individuals in households interviewed during 2015. Professional, administrative, and related also includes scientific, technical, management, and waste management. Civilian employment includes additional sectors not individually listed.

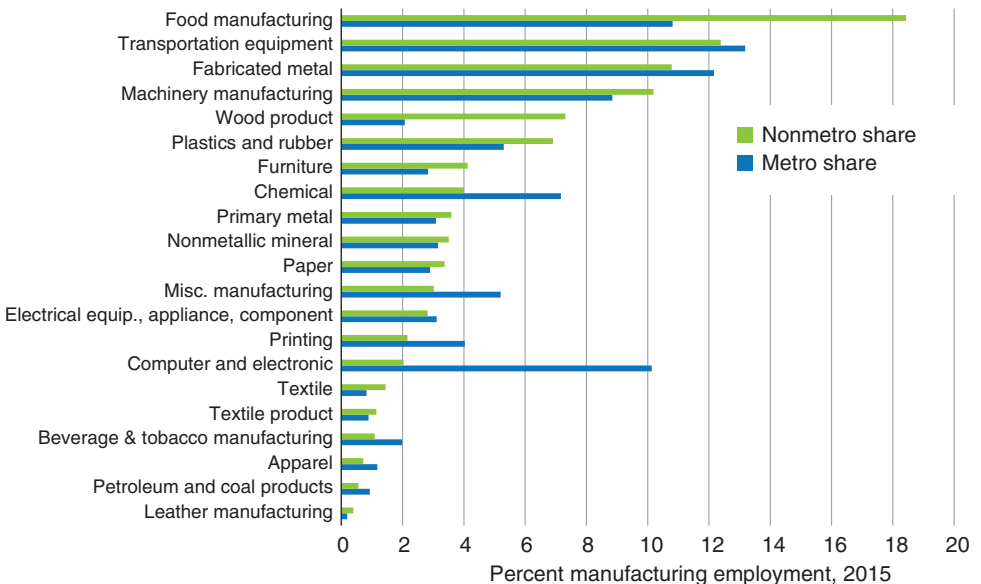
Source: Chart from *Rural America at a Glance, 2016 Edition*, Economic Information Bulletin 162, USDA, Economic Research Service. Data from U.S. Census Bureau, 2015 American Community Survey.

## Rural manufacturing employment trends vary by subsector

Aggregate trends in manufacturing employment mask differences across manufacturing subsectors. For example, rural America has a comparative advantage in proximity to raw materials for the wood product subsector, which is relatively larger in rural areas. Wood product manufacturing accounted for 7 percent of rural manufacturing jobs and just 2 percent of urban manufacturing jobs in 2015 (fig. 6). Wood product manufacturing includes many inputs to housing, like wood flooring, trusses, engineered flooring, and manufactured homes.

Figure 6

### Food and wood product manufacturing is more important in rural than urban areas



Source: USDA, Economic Research Service analysis of Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

Food manufacturing is the largest subsector of rural manufacturing, accounting for over 18 percent of rural manufacturing employment in 2015 (fig. 6). By comparison, food manufacturing represents 11 percent of urban county manufacturing employment (third largest). Like wood product manufacturing, food manufacturing is not necessarily footloose (i.e., able to locate anywhere); in some instances, there may be gains in locating near the source of inputs such as cattle or unprocessed tomatoes.

Transportation equipment manufacturing is the second-largest rural subsector at 12 percent of rural manufacturing employment in 2015 (fig. 6) and is the largest urban manufacturing subsector (13 percent). Transportation equipment includes auto, auto parts, aerospace, ship, and railroad manufacturing. In 2015, over half of rural employment in this subsector was in auto parts manufacturing.

Fabricated metal product manufacturing is the third-largest rural subsector, with 11 percent of rural manufacturing employment, almost the same as the urban share (at 12 percent, the second-largest urban subsector). Fabricated metal product manufacturing includes forging, hardware manufacturing, machine shops, and coating/engraving/heat-treating establishments.

## Employment has declined in most manufacturing subsectors, but employment in the largest rural subsectors declined less, rebounding after the recession

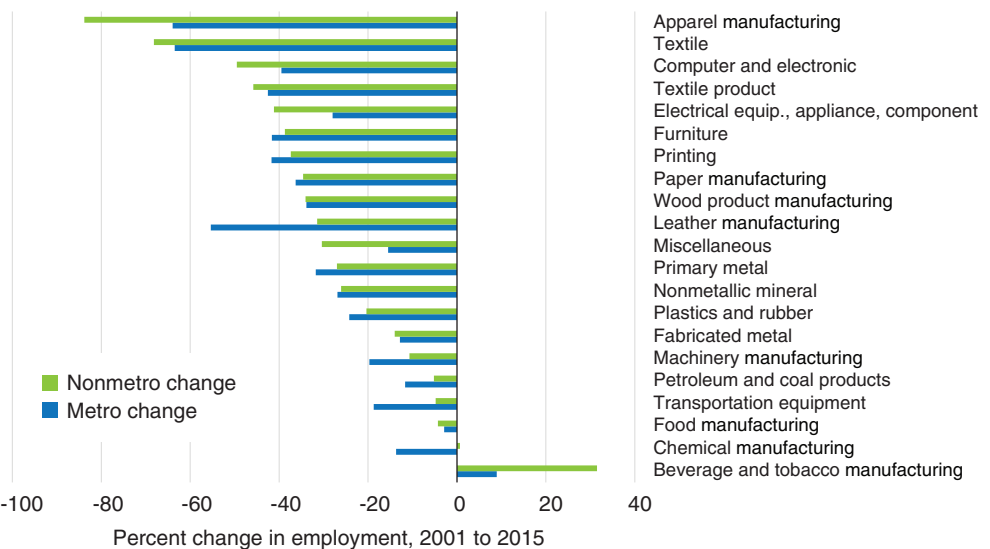
As with employment shares, looking at aggregate employment change masks differences across manufacturing subsectors. Employment declined in almost every manufacturing subsector during 2001-15 (fig. 7). Employment in the four largest rural manufacturing subsectors (food, transportation equipment, fabricated metal, and machinery manufacturing) declined less than in many other subsectors, each exhibiting a decline in jobs of less than 20 percent. Although beverage and tobacco manufacturing employment increased by over 30 percent from 2001 to 2015, this subsector represented only 1 percent of rural manufacturing jobs in 2015. The growth was in beverage rather than tobacco manufacturing; rural beverage manufacturing employment increased by over 50 percent during the study period, with brewery employment increasing three-fold.

Rural textile and apparel employment experienced the largest decline between 2001 and 2015; however, these three subsectors (textile mills, textile product mills, and apparel manufacturing) represent a relatively small proportion of rural manufacturing employment (3 percent in 2015, down from 9 percent in 2001).

Trends in average annual manufacturing employment change were similar in urban and rural portions of the country (fig. 8; dotted lines are for total metro or nonmetro manufacturing employment). Rural manufacturing employment was at 76 percent of 2001 levels in 2015, while urban employment was at 75 percent.

Figure 7

### Employment declined in most manufacturing subsectors between 2001 and 2015



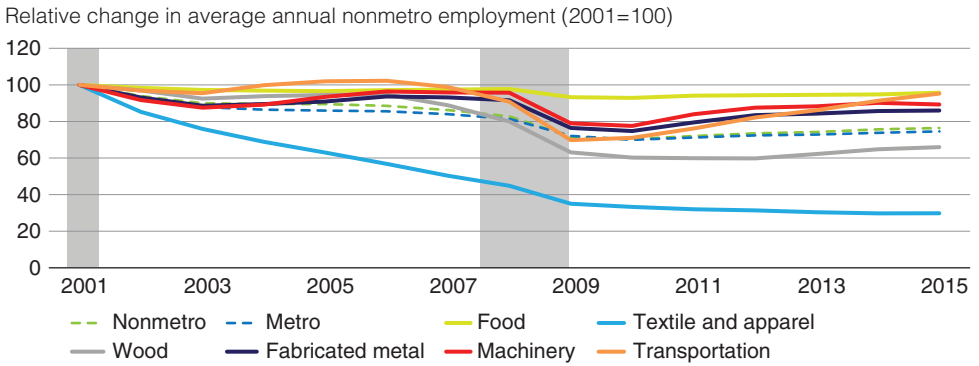
Source: USDA, Economic Research Service analysis of Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2015 and 2001.

Annual change in employment varies more for selected manufacturing subsectors than for manufacturing as a whole, with some being more cyclical than others. Food manufacturing employment was relatively steady throughout the study period, dipping slightly during the Great Recession and ending at 96 percent of 2001 levels in 2015. The fabricated metal and machinery manufacturing subsectors, being more cyclical than food manufacturing, fell as low as 75 percent and 78 percent of 2001 levels in 2010, respectively, but subsequently rebounded to 86 percent and 89 percent in 2015. Rural transportation equipment manufacturing employment was solid until dropping sharply in 2009, but subsequently rebounded and was at 95 percent of its 2001 level in 2015. The textile and apparel subsectors declined more than other subsectors, ending at just 30 percent of 2001 employment in 2015.

### Rural manufacturing wages vary by subsector and are lowest in production worker-intense subsectors

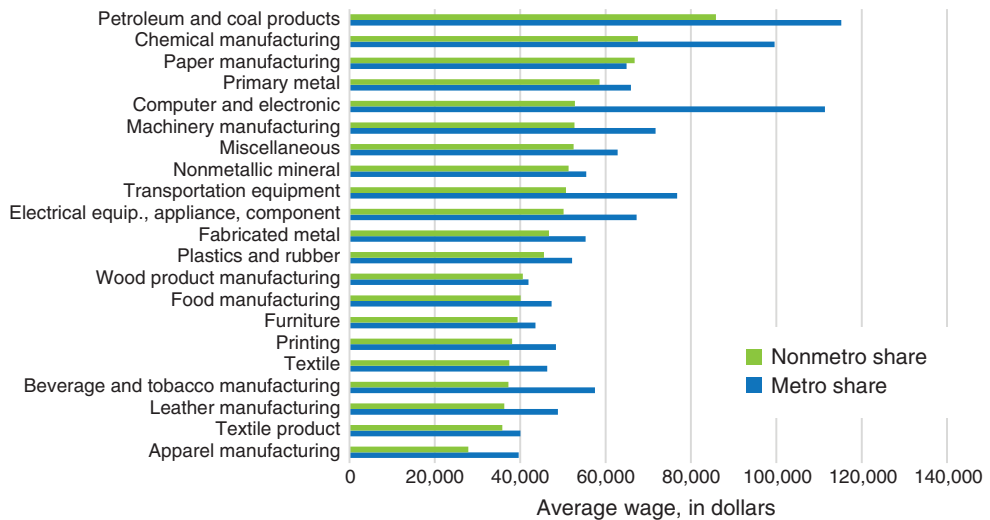
Wages vary across manufacturing subsectors for a variety of reasons, including the education/skills required, technology adoption, proximity to urban areas, and the occupational mix of the subsector’s workforce (fig. 9). Average annual wages in manufacturing subsectors can be considered a rough proxy for education or skill requirements since higher wages are correlated with higher levels of human capital.

Figure 8  
**Employment trends were similar in rural and urban manufacturing overall and across several subsectors, but declined in textiles and apparel throughout the period**



Note: Gray background indicates recessionary periods. Unless otherwise noted, all data are for nonmetro counties.  
 Source: USDA, Economic Research Service analysis of Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2001-2015.

Figure 9  
**Average annual rural wages were highest in the energy and chemical subsectors in 2015**



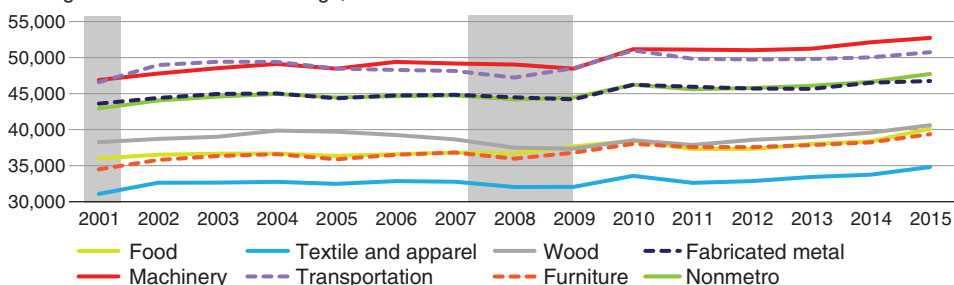
Source: USDA, Economic Research Service analysis of Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2015.

Subsectors with lower average wages are those requiring more production workers, such as furniture manufacturing and food manufacturing. In furniture manufacturing in 2015, 63 percent of employees were in production worker occupations; in food manufacturing, the share was 54 percent. Conversely, workers in production occupations accounted for only 41 percent of chemical manufacturing employment and 43 percent of petroleum/coal product manufacturing—two subsectors with high average wages.

In real dollars, average annual rural manufacturing wages grew modestly after the 2001 recession. Wages dipped during the Great Recession, then slowly rebounded, exhibiting the highest rate of growth between 2014 and 2015 and ending 11 percent higher than 2001 levels in 2015 (fig. 10). Average wages for many rural manufacturing subsectors appeared to move in the same trajectory during the study period. The jump in 2010 wages may be due to lower-paid production workers being laid off during the recession.

Figure 10  
**Wages followed similar trends across several subsectors**

Average annual nonmetro earnings, 2015 dollars



Note: Note: Gray background indicates recessionary periods. All data are for nonmetro counties.

Source: USDA, Economic Research Service analysis of Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2001-2015.

This research was conducted with restricted access to Bureau of Labor Statistics (BLS) data. The views expressed here do not necessarily reflect the views of the BLS.

## Definitions and additional information

Throughout this report, nonmetropolitan counties, as defined by the Office of Management and Budget (OMB), are referred to as “rural” or “nonmetro.” The 2013 OMB definition of metropolitan (urban) and nonmetropolitan (rural) is used in this report. See the discussion of these terms on the Economic Research Service’s website.

This report focuses on the manufacturing sector as defined by the North American Industrial Classification System (NAICS) codes 31-33, while the subsector analysis focuses on the 21 3-digit NAICS codes that comprise NAICS 31-33. These subsectors include: Food Manufacturing, Beverage and Tobacco Product Manufacturing, Textile Mills, Textile Product Mills, Apparel Manufacturing, Leather and Allied Product Manufacturing, Wood Product Manufacturing, Paper Manufacturing, Printing and Related Support Activities, Petroleum and Coal Products Manufacturing, Chemical Manufacturing, Plastics and Rubber Products Manufacturing, Nonmetallic Mineral Product Manufacturing, Primary Metal Manufacturing, Fabricated Metal Product Manufacturing, Machinery Manufacturing, Computer and Electronic Product Manufacturing, Electrical Equipment, Appliance, and Component Manufacturing, Transportation Equipment Manufacturing, Furniture and Related Product Manufacturing, and Miscellaneous Manufacturing. For ease of discussion, some subsectors—like the three textile and apparel subsectors—are combined in parts of this report.

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