

CHAPTER De

Distribution

Editor: Daniel M. G. Raff

DISTRIBUTION

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Paul H. Nystrom, Professor of Marketing at the Columbia University Graduate School of Business, finished writing the third edition of his authoritative account of retailing shortly before the enumerators for the initial Census of Distribution took to the field in the springtime of 1930 (Nystrom 1930, volume 1, p. 4). There were roughly 6.4 million individual farms and 196,000 factory establishments in the American economy of the day, perhaps half producing goods for consumers. Americans themselves, he observed, numbered about 120 million. They were scattered over 3 million square miles. Nearly half of the population (49 percent) lived outside the 3,000 cities with populations of more than 2,500.¹ The scale of the problem of distribution is immediately apparent.

In that 1930 Census, distribution employed just shy of 5.8 million people, 19.7 percent of the nonagricultural work force. In 1900 the percentage had been 16.5, and by 2000 it was 21.1. By comparison, manufacturing in 1900 employed 36.0 percent, falling to 32.5 in 1930 and, as the economy continued to evolve and the world to change, manufacturing fell to 15.1 percent in 2000. The percentage share of distribution in gross domestic product (GDP) at the millennium was 16.0. Manufacturing stood at 14.1. Distribution has been a substantial part of the economy for a very long time. It is, in part for reasons that will be discussed, an increasingly important one.

The Contents of This Chapter

The body of this chapter gives time series, both aggregated and broken down, on retail and wholesale trade and on the related subject of advertising. The first Census of Retailing defined retailing as “the process of purveying goods to ultimate consumers for consumption or utilization, together with services incidental to the sale of goods” (U.S. Bureau of the Census 1933, volume 1, p. 13). The basic economic task carried out by retailers is thus the anticipation of the variety of wants and the convenient provision of candidate

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satisfactions. Wholesale trade was defined as a complementary category, thus including sales to retailers, intermediaries of various sorts, and to manufacturers who use the goods as intermediate or capital inputs.² The measurement has been carried forward without significant modification. The two together are important because they are what stands between manufacturing and consumption: they represent the distribution sector of the economy. Advertising is also covered in this chapter since it is reasonably viewed as an activity whose purpose is to encourage and facilitate distribution.

Some series in the chapter go back as far as the late 1860s.³ Most begin in 1929, when the Census first began to cover distribution (as discussed later) or later as the coverage developed. Most of the data come from Bureau of the Census or Commerce Department sources or from trade journals. Some of the advertising data derive from the industrious research of Mr. Robert J. Coen of the advertising agency McCann–Erickson in New York.

The data are presented in four basic groupings. The first presents general statistics on the distribution sector. This includes series giving national income originating in wholesale trade, retail trade, and selected service industries, corresponding figures for employment, corresponding figures for wage and salary accruals, the number of establishments, sales, payroll, and employees all grouped by legal form of organization, and the book value of inventories industry category. The second gives finer detail for retail trade grouped by industries. It shows the number of establishments, sales, persons engaged, statistics on sales of multiunit firms and chain stores, and some limited information on trade margins, department store sales and stocks, and the number and sales of establishments in selected service industries. The third gives finer detail for wholesale trade by industries, showing establishments, sales, operating expenses, and employment by type of business, sales by industry, and more limited data on sales and stocks of merchant wholesalers and on trade margins of independent wholesalers. The fourth gives data on advertising expenditure (by medium) and finer data on newspaper advertising (by expenditure and by lineage) and magazine advertising.

The principal distinctions drawn in these tables are those between retail and wholesale and those between the industries. These distinctions carry over essentially intact (notes are given as appropriate) from the previous edition of *Historical Statistics of the*

¹ Nystrom (1930), volume 1, pp. 3–4. After the category of “cities” came “towns,” “villages,” “hamlets,” and only then “the country.” That these distinctions seemed worth making at all speaks volumes.

² For the discussion in the report on the first Census of Distribution, see U.S. Bureau of the Census (1933), volume 1, pp. 3–4.

³ The principal source of these nineteenth-century figures is the National Bureau of Economic Research study of Barger (1955).

United States. All data are given here on the Standard Industrial Classification (SIC) industry definitions. Subsequent editions will be more complex owing to the transition to North American Industrial Classification System (NAICS) definitions.⁴

History of the Institutions of Distribution

As with other sectors of the American economy such as agriculture and manufacturing, the distribution sector has changed dramatically in response to exogenous changes in transportation, information technology, population distribution and density, and the spatial configuration of our cities and communities. Some background knowledge about the evolving institutions of distribution in the economy is helpful for seeing what the statistical data do and do not reveal.⁵

Public or covered markets were present in some colonial cities, but market days and fairs do not appear to have been a durably significant factor in trade.⁶ Lasting institutions of distribution began with general merchants in coastal cities of initial settlement. Trading posts with very modest offerings followed the fur trade and grew slightly in their breadth of merchandise as the westward migration began and farms and towns began to appear. Peddlers proceeding on foot or in wagons pursued trade in less populated regions. These brought the products of colonial craftsmen and New England industry (Nystrom mentions, for example, pins, needles, hooks and eyes, scissors, razors early on and eventually dry goods, hats, and hardware).⁷

As hinterland towns (or at least population centers) developed, so did general stores.⁸ These sometimes ran as adjuncts to inns or farms, sometimes as freestanding enterprises. They were typically staffed by the owner or the owner's family and supplied the sort of goods a relatively rural and not terribly prosperous clientele would want: food, tools, and more materials out of which the industrious could make dresses and the like, rather than the dresses themselves. Stock was acquired on annual (or, as the mid-nineteenth century approached, sometimes semiannual) visits to trading centers such as Boston, New York, Philadelphia, and Baltimore.⁹ Transactions were on a credit basis for much of the year. Pot-bellied stoves and a place to sit and chat were common features of these stores.

Perhaps information on the creditworthiness of the farmer-clients was gleaned from the gossip.

The coastal centers offered more. There, great merchants imported goods, sometimes by the boatload, from abroad and sold at both retail and wholesale (Bailyn 1955; Baxter 1945; Bruchey 1956; Porter 1931, 1937). In their capacity as wholesalers they did then what wholesalers do still: they sourced; they broke bulk; and they maintained for the benefit of the retailers with whom they did business broader and deeper inventories than the retailers – given their own locations and clienteles – could afford.¹⁰ Thus, the variety of goods available to consumers was much wider than it otherwise would have been. These urban wholesalers owned the merchandise they sold. Smaller general stores also continued to trade in the urban areas, as did some more specialized shops where the population would support such a division of labor. A different category of wholesaler, the commission merchant, figured in these early years, principally though not entirely in the trade in agricultural commodities.¹¹ Commission merchants coordinated transactions for a fee but never took ownership of the goods and so stood no price risk. A particularly elaborate set of institutions developed in the South and the trading ports around the financing of the cotton trade. As a general matter, however, the commission merchant system died out by the 1870s.¹²

As the larger cities grew, particularly in the course of the nineteenth century, the most conspicuous change in this overall pattern was the tremendous growth in cities of specialized retailers selling an increasingly wide variety of goods in single-category establishments with assortments that would now be called narrow and deep. Hower, citing examination of city directories and advertisements during the period 1800–1855, lists books; boots and shoes; carpetings; china and glassware; cloaks and mantillas; combs and fancy goods; cutlery and hardware; fancy dry goods; feathers and mattresses; furniture; men's furnishings; groceries; hats, caps, and furs; hosiery and gloves; India rubber goods; laces and embroideries; millinery; saddles, trunks, and harness; silks and ribbons; tea and coffee; tobacco and snuff; upholstery; umbrellas and parasols; butter and cheese; and ready-to-wear clothing for men (Hower 1943, p. 83). There are suggestions from mid-century observers of finer divisions still (pp. 83–4). This was not the only development in the institutions of distribution. In the 1850s and 1860s, full-line wholesalers began to take over the trade of selling to retail stores. By the late 1860s they were central to it; and they did not fade away thereafter (Chandler 1977, pp. 209, 217–18).

A watershed event in this Smithian progress of the division of labor began with the emergence of department stores from the 1840s in New York and in succeeding decades elsewhere. The institution became established in cities of all sizes in the decades following the Civil War and represented the first tentative beginnings of mass distribution in retailing.¹³ The outward form was a single

⁴ See the Introduction to Part D for a discussion of industrial classification and a detailed discussion of the SIC and NAICS systems.

⁵ The marketing and business historians give the same basic picture of institutional change so far as those literatures go. The locus classicus of books with a marketing perspective is Nystrom (1930), especially volume 1. A more recent source with a sweeping view (and more statistical data) is Bucklin (1972). The standard business history account is Chandler (1977). Its footnotes to the historical literature are especially thorough. See also Tedlow (1990). For reasons discussed later, the time is increasingly ripe for a new view.

⁶ For an image of one market's structure, see Teitelman (2000).

⁷ See Nystrom (1930), p. 77. Perhaps the most famous of these travelers was Mason Locke (Parson) Weems, who sold books for the Philadelphia publisher Matthew Carey and, in his idle hours, wrote a famous though less than entirely reliable biography of George Washington. See, vividly, his letters in Skeel (1929).

⁸ The leading authority on these institutions is Lewis Atherton (1939, 1949). See also Martin (1939); Jones (1937); Hower (1943), pp. 77–82; and Massachusetts Bureau of Statistics of Labor (1900), pp. 58–64.

⁹ Latterly also Cincinnati, Chicago, and St. Louis. This cycle changed with the coming of the railroad. See Atherton (1939), p. 82.

¹⁰ For a more detailed portrait of the business of a somewhat less grand wholesaler of the day (Troth and Company, of Philadelphia), see Porter and Livesay (1971), pp. 29–34.

¹¹ For the general view, see Albion (1939), pp. 275–6.

¹² See Chandler (1977) on the cotton institutions (pp. 20–3) and on the transitions in the second half of the century (pp. 215–24).

¹³ For histories of the leading establishments, see Elias (1992); Hower (1943); Twymann (1954); and Appel (1930). Some of the early department stores also did a wholesale trade for a time, but this was not a regular feature.

large establishment, typically located in the central business district and often at transportation terminus of some sort, containing many areas specialized in particular categories of goods, each one run by what was in effect a general manager with profit-and-loss responsibility for that category and responsibility for merchandising as well as selling. Department managers needed to be close to the selling: they ordered well ahead of demand and therefore needed to know their customers' tastes. The managers also had an indirect incentive to forecast well: the areas allocated to particular categories could be expanded and contracted as profitability suggested, since there were generally no masonry walls defining the spaces (as would have been the case in a congeries of free-standing stores). The numbers of departments and related services (restaurants, tearooms, and the like) were sometimes very large – Macy's reckoned sixty-five in 1902, while Marshall Field counted over one hundred fifty in 1904 – and the facilities overall were sometimes positively opulent. The central court in Wanamaker's central Philadelphia establishment was, for example, an arched and domed space five stories tall, outfitted with a massive pipe organ and a striking 2,500-pound sculpture of an American eagle. It was by common assent the most impressive interior space in any commercial building in the city. Altogether, the objective was to make the store into a destination for shoppers. Through consolidation of back-office operations and the general scale of orders and operations, unit costs, and by extension prices, could be kept relatively low. The volumes were, at least by the standards of the competing local specialty stores, enormous.¹⁴

The business of the leading department stores was indeed very large, but true mass distribution should be associated first with another late nineteenth-century institutional innovation, the mail order store.¹⁵ The early history of Sears, Roebuck and Company is exemplary.¹⁶ Richard Sears was an underemployed telegraph operator in Minnesota who became aware of a shipment of watches that proved to be unwanted by the consignee. The wholesaler offered Sears the watches at a wholesale price far below what the watches could bring at retail. Sears used the telegraph and his spare time very profitably to place the watches with railroad station agents who could sell the watches locally at a comfortable margin. This seemed altogether more promising than telegraphy, and he started his first company in 1886. Soon Sears was placing newspaper advertisements and making direct mail solicitations. He sold that company and worked briefly in banking, but found he preferred sales. He started Sears, Roebuck in 1893 and in that year mailed out his first catalogs. More than 300,000 went out in 1897 and the numbers were in the millions by 1904. The institution in effect rode

the back of the U.S. Post Office (for delivery of the catalogs) and expanding rail service to bring something like the selection of a department store to people who lived far from any urban center.¹⁷ Sears was not himself a particularly effective manager, though he was a tremendously gifted salesman; but once the company hired someone with the requisite vision and skills for the top position and gained control of the massive coordination problems operations posed, the business really began to blossom.¹⁸ The effect of all this upon the American sense of living standards was such that one historian has referred to the Sears catalog as “the Bible of the new rural consumption communities,” and Franklin Roosevelt is said to have remarked that if he could put a single book into the hands of every (Soviet) Russian, it would be the Sears catalog (Boorstin 1973, p. 128; Tedlow 1990, p. 261). The company continued to grow for many years. In 1971 Sears was large enough to rank fourth in the Fortune 500 (*Fortune* 85 (May 1972): 190, 216). Its total revenues were roughly 1 percent of GDP (Katz 1987, p. vii).

Chains properly so-called are multiestablishment retail firms with centralized administration and merchandising. The earliest statistical data are given in Table De220–224 (from 1929, see Table De225–247). These enterprises first began to emerge in the late nineteenth century, not long after the completion of the nation's railroad and telegraph infrastructure, the immense expansion of productive capacity of the Second Industrial Revolution, and the enhanced interest in large-scale distribution that came along with these.¹⁹ The growth of the chains attained its greatest salience in the 1920s and 1930s.²⁰ Chains by then were active both in categories with relatively narrow stock-keeping requirements, such as restaurants and cigar stores, and in categories with relatively broad ones, such as groceries and five-and-dime stores. The chains exploited a large target market (regional and even national) to place large orders and obtain their merchandise at unit costs that were very low relative to their local competitors. They sold no aura of exclusivity, nor did they offer particularly personal service. Procurement was centralized and local managers had relatively little autonomy. In particular, they had relatively little ability to adapt assortments to local demand patterns and preferences. The initial response of local small merchants appears to have been to seek political protection (see below). The initial response of department stores, which generally had more room to maneuver, was to retreat from categories in which the department stores could not sustain some such competitive advantage but remain active in those in which they

¹⁴ For contemporary accounts from Massachusetts on the impact of department stores on retail trade in specific lines, see Massachusetts Bureau of Statistics of Labor (1900), pp. 39–56. Unfortunately, systematic national statistics about department stores begin only in 1919. See Table De291–292 for indexes. Barger (1955, p. 148) gives decadal estimates of total department store sales for 1869–1929. Department stores are broken out as a category within the “general merchandise” group coverage in the economic censuses starting in 1929.

¹⁵ Barger (1955, p. 148) gives decadal estimates of total mail order sales for 1899–1929. Mail order stores are broken out as categories within the “general merchandise” group coverage in the economic censuses starting in 1929.

¹⁶ See Emmet and Jeuck (1950) and Worthy (1984). On the other two large mail order companies, see Boorstin (1973), pp. 121–4, for Montgomery Ward; and see Smalley and Sturdivant (1973) for Spiegel.

¹⁷ It is difficult to say precisely how many stock-keeping units the firm handled in this period, but a representative catalog contained twenty to thirty thousand items (some in a number of variants and sizes, some not).

¹⁸ For more on coordination and complementarities in the history of the company, see Raff and Temin (1999). For a somewhat journalistic but still illuminating account of the company's later struggles, see Katz (1987).

¹⁹ On the Second Industrial Revolution, see Chandler (1977), especially Parts III and IV. These developments had their roots in new production technologies suitable for very large-scale production; but administrative coordination of materials and product flows to fully exploit the new technology was a central part of the change. Second Industrial Revolution firms often integrated vertically beyond simple manufacturing, going forward toward distribution, backward into supply, or both, “reduc[ing] the number of transactions involved in the flow of goods, increas[ing] the speed and regularity of that flow, and so lower[ing] costs and improv[ing] . . . productivity” overall (p. 209).

²⁰ On chain stores, see Beckman and Nolan (1938).

could.²¹ The rural mail order business became less attractive in the 1920s and by the end of the decade both Sears and its great competitor Montgomery Ward had begun to open retail establishments, typically on the edge of cities and in suburban areas, whose economic basis resembled chain stores.

The institutional innovations of the fifty years following World War II derived to a substantial extent from the suburbanization of the population. As places of residence came on average to be less and less convenient to the central business districts of cities and towns, privately owned business districts in more peripheral locations emerged – first strip malls along highways, then enclosed local and regional malls generally near interstates.²² The pace of overall growth was rapid. Retail space per capita was estimated by Bear Stearns to be 5.3 square feet per person in 1964 and 19 square feet in 1996. The largest malls were simply vast, enclosing 3–4 million square feet. Malls typically had several department stores or other types of general merchandise retailers as their anchor tenants, and had many smaller tenants as well. All the stores were, increasingly, operated as chains. Chained discount department stores also became common. These were typically sited in convenient suburban locations and offered merchandise that had failed to sell either at first price or on sale in traditional department stores or was simply of lower quality.²³

In all of this, the chain phenomenon evolved in significant ways. The paradigm case is Wal-Mart. Superior management of merchandising and logistics, all supported by the intensive use of information technology and rapid scientific analysis of sales data, enabled Wal-Mart, originally a small-town general merchandise discount retailer in the southeastern United States, to operate many large stores with superior profitability and eventually to become the largest firm in the economy.²⁴ Inventory-keeping methods progressed slowly into the information age. But by the mid-1970s, it was possible to capture detailed information about sales in real time from checkout registers equipped with lasers and dedicated

reading equipment to scan product bar codes while simultaneously adding up the customer's bill (Dunlop and Rivkin 1997, p. 5). Wal-Mart, exploiting this opportunity from 1981, shifted the traditional reliance from mass procurement well in advance of demand – in effect speculating on what consumers would want and pushing inventories onto the buying public – to high-frequency monitoring of sales, pulling goods in current high demand through the upstream channels, efficiently dispatching them to the stores that could use them, and in the course of all of this optimizing the use of (the inevitably limited) shelf space (Vance and Scott 1994, pp. 92–5; Abernathy, Dunlop, et al. 1999, pp. 49–50). Indeed, following out the logic of this has led Wal-Mart and other mass merchandisers to share sales data by stock-keeping unit – in apparel, for example, by size, style, and color – with manufacturers in order to ensure that the desired goods, manufactured in appropriate lot sizes, will always be on the shelf when needed (see, for example, Buzzell 1993). Overall investment levels required for this information-intensive mode were often very substantial, given the number of locations from which data needed to be gathered and transmitted, the massive amounts of data that needed to be processed, and all of the training required to implement this system. Wal-Mart's initial commitment was on the order of \$700 million (Reid 1995).

In this transition, intrafirm distribution centers acting to some extent as internal wholesalers became a significant feature of the distribution system. Distribution centers function differently from traditional wholesalers' or chain store warehouses. Their main purpose is less to check inventory (against orders) and then hold it against future demand than to check it and then efficiently route it to a store that wants it immediately. Distribution centers therefore tend to be smaller than traditional warehouses but to have more extensive access and to have more sophisticated and efficient materials-handling systems. They certainly require much more sophisticated information-processing systems than older wholesale warehouses did, given the breadth of merchandising modern chain stores have adopted. A survey in the late 1990s showed ordinary-sized chain supermarket establishments carrying in the range of 25,000 to 40,000 stock-keeping units (distinct product variants), and especially large ones, 40,000 to 60,000. Mass merchandisers such as (conventionally sized) Wal-Marts and K-Marts stocked 100,000 to 150,000 units. Standard department store branches often kept 800,000, with flagship locations carrying between 1 and 2 million (Abernathy, Dunlop, et al. 1999, p. 41). Chains often had many hundreds of stores. The information-processing requirements were, relatively speaking, massive.

As information capture and analysis became cheap in the closing decades of the twentieth century, national chains emerged specializing in specific product categories and offering assortments in local stores that were tremendously broad both by earlier standards and even by the standards of comparable categories in the information-intensive general merchandise retailers. These became known as "category killers" because they were the death knell to department store trade in their categories. By comparison to the overall stock-keeping units figures given earlier, stores in such category-killer chains as Home Depot and Toys "R" Us carried roughly 80,000 (Abernathy, Dunlop, et al. 1999). Category-killer stores in the book trade at the time often carried 100,000 to 160,000 individual titles.

This was an affirmative response to a consuming public whose tastes were thought to have become increasingly differentiated

²¹ See "Merchandise Type Promotion to Gain," *New York Times*, October 6, 1929, Section II, p. 21. For a more general perspective, see McNair (1958). There was also a movement toward the consolidation of department stores in the 1920s. See, for example, "Growth of Department Store Chains," *Dry Goods Economist* 78 (October 4, 1924): 11–12; "Department Store Consolidations," *Harvard Business Review* 4 (1925/1926): 459–70; and "Department Store Consolidation and Association," *Journal of Retailing* 2 (April 1926): 14–15. In retrospect this movement seems to have had more to do with generational transitions and a buoyant stock market than the transformation of operations. For contemporary views of the nontransformation, see "Department Store Extension," *Harvard Business Review* 6 (1927/1928): 81–9; Falk (1929/1930); and Emmet (1930), p. 57.

²² The pace of overall growth was rapid. Retail space per capita was estimated by Bear Stearns to be 5.3 square feet per person in 1964 and 19 in 1996. See Silverman (1997), pp. 1 and 10–11, for this and other data.

²³ These derive from low-price departments typically located in the basements of center city department stores. The most famous antecedent was that of Filene's in Boston. See Nystrom (1930), pp. 168–70, for some general background. Drew-Bear (1970) gives a number of firm histories.

²⁴ For some of the basic detail on Wal-Mart, see Bradley, Ghemawat, and Foley (1994). The company's total revenue reported in the 2003 *Fortune* 500 list was \$246.5 million. The second-place firm, the automobile manufacturer General Motors (of which it was once famously said that what was good for the country was good for GM and what was good for GM was good for the country) came in at \$186.8 million.

starting in the late 1960s.²⁵ Manufacturers' ability to keep such chain stores (and, indeed, their smaller competitors) continuously in stock did not improve apace. But the wholesale trade often invested in the required information infrastructure and did well out of it with both types of retailers. The chains ended up sourcing some of their merchandise direct to stores from manufacturers, some via wholesalers, and some via their own internal warehouses, with the proportions among these varying as costs and opportunities shifted. The smaller independent stores simply got improved wholesaler selection and service. All classes of retailers were able to keep lower levels of inventory per product in the stores.

The coming of the Internet in the 1990s promised to extend these developments. The Internet proper offered the prospect of faster, cheaper, and more reliable communications along the supply chain, in effect supercharging earlier efforts in product description standardization and electronic data interchange.²⁶ The World Wide Web offered the possibility of a final customer interface, thereby allowing the broad consuming public (or at least those who had Internet connections) access to a far wider range of goods than could profitably be kept in stock in any local retail store.²⁷ This was of course an attractive proposition only for goods that did not require direct examination prior to purchase and that could be shipped to customers reliably and reasonably promptly and inexpensively (via the private delivery services that had made major inroads into the Post Office's business). There were fewer of these categories than there appeared to be at the height of the boom in so-called technology stocks in the late 1990s, but it seems that some still exist. Many of these Internet firms remain heavily dependent on traditional (but technologically up-to-date) wholesalers for prompt order fulfillment. It is far too early as of this writing to tell whether Internet-based retailing will displace bricks-and-mortar retailing in any broad way: it may well expand the market somewhat and segment it to a smaller degree. Only time will tell. Internet competition is, however, clearly having an effect on the internal operations of many bricks-and-mortar firms, both in the services they offer and in their merchandising decisions.

Origins of Modern Statistical Data

Censuses of the manufacturing sector of the American economy have been conducted at regular intervals since 1810 (when it was a part of the third decennial census) (for a survey, see Bohme 1987). Mineral (extraction) industries and commercial fisheries – manufacturing industries more broadly construed – were added to the coverage later in the century. But the focus remained tightly on

²⁵ The impression was widespread among retailing executives and commentators. For some suggestive evidence, see Pashigian (1988); and Pashigian and Bowen (1991). The neat summary statistic from the former article (pp. 941–2) is that sales of white shirts as a percentage of men's dress shirts fell from 72 percent in 1962 to 52 in 1967 and were only 21 percent by 1986. See also the discussion in Katz (1987), *passim*.

²⁶ On the development of the former, see Brown (1997). The Internet in its broadest sense represents an important vehicle for overall economic coordination. For a provisional view, see Litan and Rivlin (2001): Chapter 2 gives an overview of the effects on manufacturing in itself, Chapter 3 of the effects of coordinating consumer information with the supply chain.

²⁷ It also offered purchase opportunities at all hours of the day and night, a particular bonus for those whose jobs or other time demands made shopping during ordinary business hours difficult.

directly productive activity. A broader and more problem-oriented interest in economic censuses emerged during and after World War I. After the war, questions of demobilization and postwar conversion seem to have been much on the minds of both the Census Bureau and the Congress. The idea of coordinating production and wants was increasingly in the air.

The first explicit mention in the *Census Annual Reports* of the idea of conducting a census of the distribution sector comes in 1926 at the end of a paragraph remarking that the central administrative offices of multiestablishment manufacturing sometimes administered distribution as well as production, thus making it difficult to measure manufacturing employment as cleanly as the Bureau would have preferred (U.S. Bureau of the Census 1926, p. 7). The next paragraph observes that many firms in the economy are concerned with distribution and that a census of them is therefore essential to a proper understanding of the manufacturing data as well as to any definite knowledge of the number and economic importance of such firms. It is unclear whether this latter was an afterthought. The Bureau commissioned a preliminary study, but it was paid for in part by the private sector. The results were published not by the Government Printing Office but by the U.S. Chamber of Commerce (U.S. Bureau of the Census 1927, p. 8; Chamber of Commerce 1928). It is possible that policy debates and grassroots concerns were a motivating factor.

Two debates might have been relevant. The first concerned retailing. Chain stores, as previously mentioned, had existed in America since the late nineteenth century; but only after World War I were they operating nationally and threatening both established mass retailers and small-town local ones. There was a major political backlash, leading to Federal Trade Commission (FTC) investigations and ultimately to retail price maintenance legislation.²⁸ The second debate concerned distribution more broadly. There had been public uneasiness about the efficiency of distribution in America at least since the Hoover Commission report of 1921 (Committee on Elimination of Waste in Industry of the Federated American Engineering Societies 1921). The 1920s were understood as a period of rapid productivity growth in manufacturing but slower growth in distribution (see Stewart and Dewhurst 1939, p. 3). The Census Bureau later commented that the American economy had by the turn of the twentieth century made a transition from not being able to produce enough to satisfy domestic wants to a state in which maximal supply was in excess of effective demand.²⁹ There was a widespread waste in distribution, that is, goods not being distributed in the most economical manner. The initial Census of Distribution was to be “the most comprehensive of all single efforts made in the field of distribution for the purpose of ascertaining the nature of the distribution mechanism, its component parts, and how it operates. It [was] hoped that the Census . . . [would] provide . . . a fairly complete picture of the complicated marketing system which has developed.”

²⁸ On all of which see Lebharr (1963). Tedlow (1990), Chapter 4, gives a vivid overview. The series of FTC staff studies leading up to FTC (1935) are rich sources of information. For the doctrinal and legal history, see McCraw (1996). Bucklin (1972) is skeptical that in the end it mattered much: “The competitive press of new and large-scale retailers upon the fabric of the law caused it to give way and to fail to achieve the desired ends” (p. 150; for the detail, see pp. 150–6).

²⁹ See U.S. Bureau of the Census (1933), volume 2, p. 3, for this and the remainder of the paragraph.

In 1927, the Census Bureau conducted the preliminary study in eleven cities. These ranged in location from Atlanta to Seattle and in size from Chicago to Fargo and Springfield, Illinois. Data were gathered on establishment sales, employee numbers in various categories, salaries and wages, and inventory levels for retail and wholesale establishments. These were tabulated in summary form both in levels and in convenient ratios and were also broken down by lines of business (forty-six) and classes of commodities (seventy-three including “unclassified”).³⁰ Data were also broken out to characterize the business of chain stores and independent stores, in particular giving distributions by establishment of annual sales for the independent stores in each line of business. Total sales, establishment numbers, and averages are given for the chains by line of business, but no indication is given of dispersion about the means. The chain means are generally larger than the independent store means, sometimes much larger. The pilot also made some use of population census data. Data on wholesale trade were also presented, though in less rich detail. Very detailed data for Chicago close out the study.

Building on the successful pilot, the 1930 Census of Distribution was completely full-blown in its geographical coverage. Enumerators – employed exclusively for the distribution census in places of 10,000 or more inhabitants, employed also for the population and agriculture census in smaller ones – visited all establishments (U.S. Bureau of the Census 1933, volume 1, p. 14). This involved visits to nearly 1.7 million worksites, a major undertaking even by Census Bureau standards. Efforts since then have only become more extensive and elaborate.

Trends in the Data

The basic statistics concerning the share of distribution in GDP and total employment were given in this essay’s introduction. The broad pattern is distribution growing larger in its importance over the century just ended as manufacturing grows smaller. At century’s end, distribution was larger on both measures. One implication of the large employment share is that productivity changes in distribution can be very important for national productivity growth even when the technology being deployed is less than state-of-the-art. One recent study suggests that 51 percent of the increase in productivity growth for 1995–1999 over 1987–1995 was attributable to wholesale and retail trade.³¹ Some more detailed trends in aggregates, drawn from Tables De73–182 and De345–462, are as follows.³²

Consistent with the narrative given earlier of post–World War II suburban development and mall-building, the ratio of population to total retail establishments has been in steady decline. The trend in total retail sales per establishment (deflated by the consumer

price index) is downward too. Retail employment per establishment has grown fairly steadily since the early 1950s and deflated sales per employee has also trended upward, perhaps as more and more tasks are shifted to information systems and to customers themselves. The share of department stores in total retail sales has been relatively steadily in gentle decline since the first Census of Distribution. The pattern for general merchandise stores is more volatile – it is said that Sears, Roebuck furnished the homes in which the baby boomers were children and there has been more recent growth, particularly at lower price points – but the secular decline is pronounced.

The more positive phenomenon is the secular rise since World War II of the sales of multiunit firms as a fraction of total retail sales. Capital availability constrained their expansion during the 1930s relative to what might have been possible. Limited supplies during the war years probably had a similar effect. The postwar sharp upward trend in these firms’ deflated total sales would certainly cheer any portfolio investor. The ratio of the number of retail establishments to wholesale establishments has been declining since the war.

Wholesale sales per wholesale establishment (deflated by the wholesale price index) are up secularly, and increasingly sharply. The same is true of deflated wholesale sales per wholesale employee. Employment per wholesale establishment is a relatively noisy series. It trends upward overall but not since the advent of information-technology-intensive distribution.

It would be in the spirit of the traditional perspective to measure the scale of new formats and to give evidence of the impact they are having across product categories. The outstanding open question of this sort as of this writing concerns the future of sales placed over the Internet. Internet firms have very different cost structures from traditional retail establishments as well as having very different cachement areas. If their active clientele became large, a number of the trends cited might be subject to change. Reliable measurement of Internet sales has begun but is not, as of this writing, advanced enough to be worth including in the tables.³³

A different perspective suggests a more radical agenda. If the ultimate task of the distribution sector is not simply conveying produced output to those who want it but rather coordinating production and wants and, in particular, providing desired variety, then statistics on Internet trade are only the beginning of the new data that would be useful. The steady development of Amazon.com, the flagship of Internet retailing, from a purveyor of books to a company selling books, toys and games, electronics, apparel, and home and garden equipment suggests that some old groupings may be losing their bite. And it is undoubtedly true that a measurement agenda seeking to reflect changes in operations would now prioritize measuring variety on offer and the institutions supporting this. The old question of whether distribution costs too much has clearly become too simple. Establishment-level data on stock-keeping units, measurements of inventory levels that controlled for stock-keeping unit numbers (for example, variety), and data that helped track the changing boundaries between retail and wholesale activity would represent steps toward answering more illuminating questions.

³⁰ The cross-tabulations are sometimes quite revealing. Just shy of half of the items by value (49.5 percent) in the category “Clothing, men’s and boy’s” were purchased from men’s ready-to-wear stores, for example, but nearly a quarter (24.4 percent) came from custom tailors and another 18.2 percent from department stores, so that these two – the closer substitutes as ready-to-wear chains pressed in on one of the department stores’ core businesses – together amounted to 42.6 percent, not yet too far behind. Women’s clothing stores and other sorts of establishments had the remainder of the trade. Chamber of Commerce (1928), p. 51 and elsewhere.

³¹ See McKinsey Global Institute (2001). For a more historical perspective, see Field (1996).

³² These tables also give more disaggregated data.

³³ Other series might also require adjustment as the Internet becomes a more stable and better understood phenomenon. During the bubble in technology stock prices, for example, a great deal of advertising for Internet firms was paid for through difficult-to-value exchanges of services rather than in cash.

Conclusion

The nation's productive capacities continue to increase, but the Second Industrial Revolution, whose impetus to vertical integration may have first planted in the mind of the Commissioner of the Census the idea of measuring the distribution sector, has come and gone (see Langlois 2003; Lamoreaux, Raff, and Temin 2003). Paul Nystrom was born in 1878 in Maiden Rock, Wisconsin, by the high bluffs above the Mississippi. The town was important to the farmers of the district because of the steamboats and, later, the railroad. Nystrom worked on a farm and in retail, taught school and became a principal, pursued advanced studies, taught at the Universities of Wisconsin and Minnesota, worked in business in the East, and was appointed to his job at Columbia at the age of forty-eight. He taught there for many years. He wrote prolifically, was the founding editor of the *Journal of Marketing*, and had a long and apparently productive retirement. He died in Spring Valley, New York, a once-rural town come within commuting distance of the great city, in August 1969. Americans were as a general matter far richer by then, and the world of goods of the American consumer was much larger than it had been. But there were no scanner units yet, no bar codes for the scanners' red glowing laser beams to shine onto, and no powerful cheap computers to decode the reflections, let alone to process and analyze the information about sales or to use the analyses to manage both assortments and the supply chain. There were facts, of course; but it was hard to see them. Nystrom's death notice in the *New York Times* suggested donations to the Lighthouse or to any other organization doing work for the blind (*New York Times*, August 19, 1969, p. 43). His death preceded slightly the revolution in information-capture and -processing practices that became feasible in the mid-seventies, began to gather momentum in the eighties, and seems to be in the process, as of this writing, of transforming the efficiency, and indeed the possibilities, of distribution. A next, and more penetrating, look at the wholesale and retail trade of the United States will explore those transformations more systematically than is possible today.

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