

Employment and the electronic cigarette/ ENDS market in the US¹

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This note provides an estimate of employment in the ENDS/e cigarette stores in the United States.

Abstract

Electronic cigarettes are sold in many types of retail outlets in the United States. Unlike traditional retail channels, i.e., convenience stores, tobacconists, gas stations and pharmacies, one specific type of outlet, vape shops are a relatively new type of establishment. This article explores data sources that enable newer estimates of the number of retailers specializing in the e-cigarette products and the number of employees these stores employ. The retail sector employed over 15 million people in the United States in 2018. Under conservative assumption on the number of workers employed per store, an estimated 23,000 workers work in e-cigarette stores.

Defining employment

A broad definition of employment in the vapor industry accounts for workers in the vapor product manufacture and distribution (including final retail) chain. Such a definition includes jobs purported to “depend on the production and sale of vapor and electronic cigarette products”.²

Counting jobs in a given sector or industry when it is narrowly defined can be challenging given overall labor force dynamics within a sector, across sectors, and over time. As an example, retail sector employment in the US rose by over half a million jobs in the aggregate between 2008 and 2018, from 15.3 to 15.8 million jobs (Table 1). Within that overall growth, individual categories of retailers (e.g. mattress sellers, department stores) have experienced growth and decline. Correspondingly, narrowly defined industry sectors that supply and support (“depend on”) these sectors--truckers and warehouses serving mattress retailers or department stores-- also tend to experience growth and decline. In the aggregate, though, many of these effects are subsumed by other effects: jobs in transportation and warehousing rose by nearly a million between 2008 and 2018.

Tobacco products are sold in a range of retail outlets throughout the country. E-cigarette are a more recent phenomenon but are also sold in a variety of retailers. Stores selling e-cigarettes typically sell a range of other non-vapor products.³ A subset of these retailers specialize in selling vapor/e-cigarette products almost exclusively (vape shops).

¹ Based on Cherukupalli (2019). Estimating the number of e-cigarette retailers in the United States. <https://drive.google.com/file/d/1WK9GdFroDa3887UiuJWdTjSRQ56JUowb/view>

² John Dunham Associates, November 21, 2019. Memorandum <https://vaportechnology.org/wp-content/uploads/2019/11/Dunham-Economic-Impact-of-Flavor-Ban-11-21-19.pdf>

³ Vapor Technology Association, 2019. “The vapor industry (as defined in this study) includes manufacturers of E-liquids, coils, box mods and other vape products, wholesalers, and retailers that sell vape products such as; vape stores, tobacco shops, convenience stores, supermarkets, gasoline stations, pharmacies and drug stores, warehouse clubs and supercenters.” <https://vaportechnology.org/wp-content/uploads/2019/11/Vapor-Industry-Economic-Impact-Study-by-Dunham-Associates-2019-Updated-FULL.pdf>

Identifying establishments that sell e-cigarettes/ENDS

Registration requirements

Identifying establishments that sell e-cigarettes is not direct for a few reasons. State license requirements vary. The industry is relatively new and evolving. State and federal rules and guidelines have also been evolving.⁴

As on Sept 30, 2018, 17 states and 4 districts or territories required retailers to have a license to sell e-cigarettes over the counter.⁵

Federally, Section 905(b) of the FD&C Act/ guidelines: “every person who owns or operates any establishment in any State engaged in the manufacture, preparation, compounding, or processing of a tobacco product or tobacco products” register with FDA the name, places of business, and all establishments engaged in these activities owned or operated by that person. Following the initial registration, every person must register annually by December 31 of each year.⁶ Vape shops are also subject to FDA retailer restrictions since 8 August 2016, the effective date of the FDA’s ENDS regulation.

Data sources for a nationwide estimate of e-cigarette retailers

ReferenceUSA⁷ compiles a comprehensive listing of business establishments in the US, both verified and unverified, with details of industry sector/ subsector and indicators for the number of employees and sales turnover.

NAICS and SIC codes are standardized hierarchical codes used to identify industries. A new 6-digit SIC code (599306) for electronic cigarette retailers was established in 2016.⁸

Estimation

As Table 3 shows, of December 2019, there were 7247 verified and 11586 unverified electronic cigarette retailers. 90 percent of these employed less than 5 employees. Using the mid-point of the categories of number of employees per store (Table 4), the average number of employees in verified electronic cigarette retailer stores in the US is **23,105**.

⁴ Businesses- up to the unique individual store location - typically have a DUNS number The DUNS number (generated by Dun and Bradstreet’s) is a unique identification system for businesses. Not all establishments, however, need to have a DUNS number. <https://www.dnb.com/content/dam/english/dnb-data-insight/db-duns-number-factsheet.pdf>

⁵ CDC, State System Licensure <https://data.cdc.gov/download/uey9-5sp9/application/pdf> . Many states (13 as on Sept 30, 2018) do *not* require a license to sell cigarettes and other tobacco products

⁶ FDA, 2017. Registration and Product Listing for Owners and Operators of Domestic Tobacco Product Establishments <https://www.fda.gov/media/78165/download>

⁷ InfoUSA Inc.(2019) ReferenceUSA. Accessed December 7, 2019. <http://www.referenceusa.com.prox1.library.jhu.edu>

⁸ Lee et al., 2016. Identification of Vape Shops in Two North Carolina Counties: An Approach for States without Retailer Licensing IJERPH 2016 Nov; 13(11): 1050 <https://www.mdpi.com/1660-4601/13/11/1050>

Caveats in interpreting estimates of the number of employees in e-cigarette stores

1. Only verified retail stores (phone verified, and quality checked) are included in the estimate of the number of retail stores and employment in those stores.⁹
2. The SIC category for electronic cigarette retailers is relatively new (introduced in 2016). Stores that are not primarily identified as e-cigarette retailers are not included.
3. Estimates are computed using the mid-point. Stores with less than 5 employees represent the largest group and are assumed to have 2.5 employees on average. Employee size may be overcounted if stores on average have fewer employees (and likewise undercounted if stores have more employees).¹⁰
4. The database does not separate out part-time and full-time workers.¹¹

⁹ Estimates were computed separately for 11,589 unverified stores (“not yet fully verified, may not be accurate”) and all stores. 218 closed/ out of business stores were excluded.

¹⁰ Individual store addresses do appear to pull up an exact employee number, but the aggregate database interface does not

¹¹ In the same database, of 106 jobs listed with the keyword “vape” for the 7-day period through December 7, 2019, 78 were full-time, 39 part-time, 4 temporary and 1 an internship.

Table 1: Employment by major industry sector, 2008 and 2018

Industry Sector	Thousands of Jobs			
	2008	2018	2008 - 2018	Change
Total(1)(2)	149,276.00	161,037.70	11,761.70	0.08
Nonagriculture wage and salary(3)	137,991.00	149,803.70	11,812.70	0.09
Goods-producing, excluding agriculture	21,277.90	20,661.30	-616.6	-0.03
Mining	709.9	683.3	-26.6	-0.04
Construction	7,162.50	7,289.30	126.8	0.02
Manufacturing	13,405.50	12,688.70	-716.8	-0.05
Services-providing excluding special industries	116,713.10	129,142.40	12,429.30	0.11
Utilities	558.8	554.6	-4.2	-0.01
Wholesale trade	5,875.00	5,852.50	-22.5	0.00
Retail trade	15,289.10	15,833.10	544	0.04
Transportation and warehousing	4,513.60	5,419.10	905.5	0.20
Information	2,983.80	2,828.10	-155.7	-0.05
Financial activities	8,206.10	8,568.80	362.7	0.04
Professional and business services	17,792.30	20,999.50	3,207.20	0.18
Educational services	3,039.80	3,727.50	687.7	0.23
Health care and social assistance	16,188.60	19,939.30	3,750.70	0.23
Leisure and hospitality	13,436.20	16,348.50	2,912.30	0.22
Other services	6,320.50	6,622.40	301.9	0.05
Federal government	2,762.00	2,796.00	34	0.01
State and local government	19,747.30	19,653.00	-94.3	0.00
Agriculture, forestry, fishing, and hunting(4)	2,071.40	2,310.00	238.6	0.12
Agriculture wage and salary	1,208.60	1,547.20	338.6	0.28
Agriculture self-employed	862.8	762.8	-100	-0.12
Nonagriculture self-employed	9,213.60	8,924.00	-289.6	-0.03

Source: Bureau of Labor Statistics <https://www.bls.gov/emp/tables/employment-by-major-industry-sector.htm>

Footnotes:

1 Employment data for wage and salary workers are from the BLS Current Employment Statistics survey, which counts jobs, whereas self-employed and agriculture, forestry, fishing, and hunting are from the Current Population Survey (household survey), which counts workers.

2 Individual sectors do not necessarily add to major sectors due to rounding.

3 Includes wage and salary data from the Current Employment Statistics survey, except private households, which is from the Current Populations Survey. Logging workers are excluded.

4 Includes agriculture, forestry, fishing, and hunting data from the Current Population Survey, except logging, which is from Current Employment Statistics survey. Government wage and salary workers are excluded.

Table 2: SIC codes for tobacco and tobacco product retailers

599301 Cigar Cigarette & Tobacco Dealers-Retail
599302 Smoke Shops & Supplies
599303 Cigar & Cigarette Lighter Fluids
599304 Cigar & Cigarette Lighters-Retail
599306 Electronic cigarette retailers

Table 3: Number of electronic cigarette retailers in the US

Employee Size	Verified	Unverified	Total
1 to 4	6535	11170	17705
5 to 9	576	396	972
10 to 19	95	14	109
20 to 49	28	4	32
50 to 99	4		4
100 to 249	1		1
250-499		2	2
Total	7239	11586	18825

Table 4: Number of employees in verified electronic cigarette retailers in the US^a

Employee Size	Verified retail establishments	Estimated number of employees		
		Verified, lower ^b	Verified, Upper ^c	Verified, average ^d
1 to 4	6535	6535	26140	16337.5
5 to 9	576	2880	5184	4032
10 to 19	95	950	1805	1387
20 to 49	28	560	1372	826
50 to 99	4	200	396	298
100 to 249	1	10	249	224.5
Total	7239	11135	35146	23105

- Verified stores in the SIC code category “599306- Electronic Cigarettes” retrieved from ReferenceUSA on December 7, 2019
- Lower bound assuming number of employees is the lower bound of each interval.
- Upper bound assuming number of employees is the upper bound of each interval.
- Average assuming number of employees is the mid-point of each interval.