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April 24, 2017

The Honorable Ron Wyden
Ranking Member
Committee on Finance
United States Senate

Electronic Cigarettes: U.S. Imports in 2016

Dear Senator Wyden:

Over the last decade, use of electronic cigarettes, known as e-cigarettes, in the United States has grown rapidly as use of traditional cigarettes declined among both adolescents and adults. As we reported in May 2015, most e-cigarettes sold in the United States were thought to be imported, but e-cigarette import volume and tariff revenue were unknown because the Harmonized Tariff Schedule of the United States (HTS) did not contain separate statistical reporting numbers (also known as 10-digit HTS numbers or codes) specific to e-cigarettes.¹ Instead, imports of e-cigarette devices, e-cigarette parts, and e-cigarette liquid were entered under HTS statistical reporting numbers that the U.S. International Trade Commission (USITC) calls basket categories, which cover a range of goods.

An e-cigarette device typically contains a battery, a heating element, and a cartridge or tank that can be empty or filled with liquid. Major e-cigarette parts include heating elements and cartridges, which can be imported separately from devices. E-cigarette liquid—which can contain nicotine in different concentrations or have no nicotine—can also be imported separately from both devices and cartridges.

In the fall of 2015, the Committee for Statistical Annotation of Tariff Schedules—comprising representatives from USITC, U.S. Customs and Border Protection (CBP), and the U.S. Census Bureau (Census)—established six new statistical reporting numbers for e-cigarette devices, parts, and liquid in the HTS. The six new statistical reporting numbers went into effect on January 1, 2016, and covered

¹GAO, *Electronic Cigarettes: Imports, Tariffs, and Data Collection*, GAO-15-491R (Washington, D.C.: May 7, 2015). All goods imported into the United States are classified by U.S. Customs and Border Protection according to the HTS. The HTS, published and maintained by the U.S. International Trade Commission, provides the legal basis for the classification of every product that enters the United States and the corresponding tariff rate the importer must pay for each product. The HTS contains numbered provisions at the 2-, 4-, 6-, 8-, and 10-digit level. The 10-digit provision is known as a statistical reporting number that can be used for tracking and reporting trade statistics.

- e-cigarette liquid that contains 5 percent or more by weight of nicotine (3824.90.2840) or less than 5 percent by weight of nicotine (3824.90.9280),²
- e-cigarette devices with cartridges that contain liquid with nicotine (8543.70.9630) or without nicotine (8543.70.9640),³ and
- e-cigarette parts, including cartridges imported separately from devices that contain liquid with nicotine (8543.90.8850) or without nicotine (8543.90.8860).

You requested that we report on e-cigarettes imported into the United States in 2016. We analyzed the e-cigarette import data for calendar year 2016, the first year such data were collected by the U.S. government. To analyze U.S. e-cigarette imports, we used 2016 data that were available in February 2017 from the public Interactive Tariff and Trade DataWeb database maintained by USITC, which incorporates U.S. trade statistics published by Census.⁴ We analyzed import data for the six statistical reporting numbers that covered e-cigarette devices, parts, and liquid in calendar year 2016. For each statistical reporting number, we analyzed customs value, dutiable customs value, tariff revenue, country of origin, and port of entry. We also analyzed data on quantities for the four e-cigarette statistical reporting numbers for which quantity is tracked.

U.S. import data are collected by CBP from records submitted by importers. These data are then incorporated into the official trade statistics published by Census. We used unrevised 2016 trade data. Census revises trade data periodically, and its first official revisions of 2016 trade data will be available in the summer of 2017.

To assess the reliability of the data, we reviewed agency documents about U.S. foreign trade statistics and interviewed CBP and Census officials about how the data were collected, how they were checked, and any limitations of the data. According to the officials we interviewed, the quality of trade data associated with new statistical reporting numbers improves over time both because the trade community learns to use them correctly and because Census is able to develop checks tailored for specific commodities or statistical reporting numbers. We determined that the 2016 data on U.S. e-cigarette imports that were available in February 2017 were sufficiently reliable for the purposes of presenting annual descriptive statistics but not for reporting monthly import data. We do not present monthly data in this report for the following reasons:

- We observed an upward trend in overall customs value for U.S. e-cigarette imports in 2016. Based on our interviews with agency officials, we concluded that it is not yet known if the data reflect an actual trend or the importers' improved use of the new e-cigarette statistical reporting numbers over the course of 2016.

²Presidential Proclamation 9549 implementing international changes to the HTS, which took effect on January 1, 2017, resulted in the renumbering of HTS statistical categories 3824.90.2840 and 3824.90.9280 to 3824.99.2840 and 3824.99.9280, respectively.

³Presidential Proclamation 9466, which took effect on July 1, 2016, resulted in the renumbering of HTS statistical categories 8543.70.9630 and 8543.70.9640 to 8543.70.9930 and 8543.70.9940, respectively. The units of quantity used for the new statistical categories were changed, enabling the tracking of the number of imported e-cigarette devices.

⁴See <https://dataweb.usitc.gov/>.

- We observed considerable monthly fluctuations in unit values (customs value divided by quantity) for e-cigarette liquid and devices. It is not yet known if these values are accurate or reflect data errors.
- We identified a notable error in the monthly data for one statistical reporting number. The 2016 data show a quantity for January 2016 for e-cigarette liquid containing less than 5 percent of nicotine by weight (classified under HTS number 3824.90.9280) that is more than 30 times the average value for the remaining months: 338,178 kilograms compared to the monthly average of 10,090 kilograms for February through December 2016. In response to our inquiries, CBP officials determined that this quantity was incorrect because of importer misclassification of some goods. According to Census officials, the corrected January 2016 data for HTS number 3824.90.9280 will be reflected in the revised 2016 data that will be released in the summer of 2017. The annual descriptive statistics we report for that e-cigarette product, and totals across all imported e-cigarette products, contain a value of zero for January, which we note in presenting the data.

We conducted this performance audit from January 2017 to April 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In summary we found the following:

- In calendar year 2016, customs value of U.S. e-cigarette imports was about \$342 million; of that amount, \$323 million was dutiable value resulting in about \$9 million in tariff revenue (see table 1). E-cigarette devices accounted for \$204 million (or almost 60 percent), parts for \$108 million (almost 32 percent), and liquid for \$30 million (almost 9 percent) of total customs value. Customs value is defined as the price actually paid or payable for merchandise when sold for exportation to the United States, excluding U.S. import tariffs (also known as duties), freight, insurance, and other charges incurred in bringing the merchandise to the United States. Dutiable value is defined as the customs value of foreign merchandise imported into the United States that is subject to tariff. In some cases, the dutiable value can be zero, if goods imported from a particular country are not subject to tariff.
- Although e-cigarettes, parts, and liquid were imported from 41 countries in 2016, e-cigarette imports from China accounted for about 91 percent of U.S. e-cigarette imports by customs value (see table 2). Imports from China also accounted for at least 98 percent of customs value for devices with nicotine and parts with and without nicotine (see table 3).
- In 2016, importers brought in 481,400 kilograms of e-cigarette liquid with higher nicotine content compared to 110,994 kilograms of liquid with lower nicotine content. From July through December 2016, importers brought in about 5.6 million e-cigarette devices with nicotine-containing liquid and about 5.3 million devices with nicotine-free liquid (see table 4).⁵

⁵Quantities were tracked for e-cigarette liquid from January 1, 2016, and began to be tracked for e-cigarette devices on July 1, 2016.

- U.S. e-cigarette imports cleared customs at 34 ports of entry; the top five ports of entry—Cleveland, Los Angeles, Savannah, Norfolk, and Seattle—accounted for 81 percent of customs value of U.S. e-cigarette imports in 2016 (see table 5).⁶

More detailed information is included in tables 1 through 5.

Table 1: Data Summary for U.S. E-cigarette Imports in 2016

	E-cigarette product, Harmonized Tariff Schedule (HTS) number, and tariff rate	Customs value (dollars)	Dutiable customs value (dollars)	Tariff revenue (dollars)
Liquid^a	E-liquid (nicotine content of 5 percent or more) HTS 3824.90.2840 Tariff rate: 6.5 percent of dutiable customs value	26,617,601	26,005,531	1,690,364
	E-liquid (nicotine content of less than 5 percent) ^b HTS 3824.90.9280 Tariff rate: 5 percent	2,888,820	2,684,570	134,249
	Subtotal for liquid	29,506,421	28,690,101	1,824,613
Devices^c	Devices (imported with nicotine) HTS 8543.70.9630 (January–June 2016) HTS 8543.70.9930 (July–December 2016) Tariff rate: 2.6 percent	54,031,562	54,028,197	1,404,745
	Devices (imported without nicotine) HTS 8543.70.9640 (January–June 2016) HTS 8543.70.9940 (July–December 2016) Tariff rate: 2.6 percent	150,339,057	131,854,876	3,428,330
	Subtotal for devices	204,370,619	185,883,073	4,833,075
Parts^d	Parts (imported with nicotine) HTS 8543.90.8850 Tariff rate: 2.6 percent (January–June 2016) 1.9 percent (July–December 2016)	26,302,044	26,275,168	584,030
	Parts (imported without nicotine) HTS 8543.90.8860 Tariff rate: 2.6 percent (January–June 2016) 1.9 percent (July–December 2016)	82,078,224	81,888,575	1,648,097
	Subtotal for parts	108,380,268	108,163,743	2,232,127
Total	Total	342,257,308	322,736,917	8,889,815

Source: GAO analysis of U.S. Census Bureau data as retrieved from the U.S. International Trade Commission's Interactive Trade DataWeb (accessed Feb. 9, 2017). | GAO-17-515R

⁶The port of entry is where imported goods clear U.S. customs and may differ from the port of unloading where goods are unloaded from the importing vessel or aircraft.

Notes: Customs value is defined as the price actually paid or payable for merchandise when sold for exportation to the United States, excluding U.S. import tariffs (also known as duties), freight, insurance, and other charges incurred in bringing the merchandise to the United States. Dutiable value is defined as the customs value of foreign merchandise imported into the United States that is subject to tariff.

^aAccording to the HTS, “mixtures for use in personal electric or electronic vaporizing devices means a formulated liquid, whether or not containing nicotine, and whether or not packaged for retail sale in cartridges or tanks adaptable to such devices” (see HTS ch. 38, statistical note 3). Ten-digit HTS number (also known as statistical reporting number) 3824.90.2840 covered e-cigarette liquid containing 5 percent or more by weight of nicotine; HTS number 3824.90.9280 covered liquid containing less than 5 percent by weight of nicotine. Presidential Proclamation 9549, which took effect on January 1, 2017, resulted in the renumbering of 3824.90.2840 and 3824.90.9280 to 3824.99.2840 and 3824.99.9280, respectively. Liquid quantity is tracked in kilograms.

^bIn this table, the summary data for customs value, dutiable value, and tariff revenue for HTS number 3824.90.9280 cover the period from February through December 2016 because of an error in the January 2016 data. According to U.S. Census Bureau officials, the corrected January 2016 data for HTS number 3824.90.9280 will be reflected in the revised 2016 data that will be released in the summer of 2017.

^cHTS numbers for devices cover both closed-system and open-system e-cigarettes if they are imported as functional devices with or without cartridges. The difference between the two sets of HTS numbers for devices is nicotine content. Presidential Proclamation 9466, which took effect on July 1, 2016, resulted in the renumbering of 8543.70.9630 and 8543.70.9640 to 8543.70.9930 and 8543.70.9940, respectively. The units of quantity used for the new HTS numbers were changed, enabling the tracking of the number of imported e-cigarette devices.

^dHTS numbers for e-cigarette parts cover major parts, such as heating elements and cartridges containing heating elements, that are imported separately from e-cigarette devices. Smaller e-cigarette components—such as microprocessors, batteries, tubes containing batteries, or light-emitting diode lights—that may be used for other products in addition to e-cigarettes are classified under other applicable HTS provisions. The difference between the two statistical reporting numbers for e-cigarette parts is nicotine content of substances in cartridges. The tariff rate for e-cigarette parts was 2.6 percent of dutiable customs value from January 1 through June 30, 2016. The lower tariff rate of 1.9 percent took effect on July 1, 2016, as a result of Presidential Proclamation 9466. Quantity of e-cigarette parts is not tracked.

Table 2: Customs Value of U.S. E-cigarette Imports by Country of Origin in 2016

41 countries, in actual dollars

Country	Customs value ^a	
	Dollars	Percentage
China	313,009,762	91.45
Canada	11,555,599	3.38
Mexico	9,434,594	2.76
Germany	1,998,540	0.58
United Kingdom	1,621,301	0.47
Israel	856,402	0.25
France	653,978	0.19
Austria	620,404	0.18
Japan	487,278	0.14
Switzerland	392,636	0.11
Italy	300,315	0.09
South Korea	225,664	0.07
Taiwan ^b	146,639	0.04
Denmark	133,761	0.04
Poland	121,811	0.04
Panama	109,968	0.03

Country	Customs value ^a	
	Dollars	Percentage
Netherlands	82,164	0.02
India	73,132	0.02
Hungary	55,626	0.02
Malaysia	51,317	0.01
Singapore	47,694	0.01
Australia	39,093	0.01
Ireland	35,176	0.01
New Zealand	32,823	0.01
Slovak Republic	28,730	0.01
Sweden	28,187	0.01
Russia	26,712	0.01
Vietnam	14,960	0.00
Romania	14,010	0.00
Croatia	10,000	0.00
Spain	8,901	0.00
Costa Rica	8,393	0.00
Philippines	7,020	0.00
Indonesia	5,000	0.00
Jordan	3,721	0.00
Bulgaria	3,215	0.00
Lithuania	2,791	0.00
Norway	2,744	0.00
Slovenia	2,448	0.00
Czech Republic	2,400	0.00
Thailand	2,399	0.00
Total	342,257,308	100.00

Source: GAO analysis of U.S. Census Bureau data as retrieved from the U.S. International Trade Commission's Interactive Trade DataWeb (accessed Feb. 9, 2017). | GAO-17-515R

^aCountry totals for customs value cover the entire calendar year 2016 for all e-cigarette Harmonized Tariff Schedule (HTS) numbers except HTS number 3824.90.9280. Customs value for HTS number 3824.90.9280 covers the period from February through December 2016 because of an error in the January 2016 data. According to U.S. Census Bureau officials, the corrected January 2016 data for HTS number 3824.90.9280 will be reflected in the revised 2016 data that will be released in the summer of 2017. The top 10 countries—China (including Hong Kong) through Switzerland—account for 99.5 percent of the total customs value of U.S. e-cigarette imports.

^bThe United States does not have diplomatic relations with Taiwan; the data we used list Taiwan as a country and break out imports from Taiwan separately.

Table 3: Customs Value of U.S. E-cigarette Imports by Country of Origin and Product in 2016

41 countries, in millions of dollars

Country	Liquid		Devices		Parts		Total by country
	With 5 percent or more of nicotine ^a	With less than 5 percent of nicotine ^b	With nicotine ^c	Without nicotine ^d	With nicotine ^e	Without nicotine ^f	
China	24.671	1.581	53.865	125.987	26.157	80.750	313.010
Canada	0.139	0.084	-	11.214	0.016	0.103	11.556
Mexico	-	-	-	9.403	-	0.032	9.435
Germany	-	0.191	0.017	1.612	0.006	0.174	1.999
United Kingdom	0.744	0.110	0.030	0.605	0.009	0.124	1.621
Israel	0.453	-	-	0.246	-	0.158	0.856
France	0.153	0.241	0.003	0.176	0.008	0.073	0.654
Austria	0.100	0.115	0.055	0.136	0.025	0.191	0.620
Japan	0.197	0.112	0.005	0.148	-	0.025	0.487
Switzerland	-	0.104	-	0.104	0.003	0.183	0.393
Other (31 countries)	0.161	0.353	0.057	0.710	0.077	0.268	1.627
Total by product	26.618	2.889	54.032	150.339	26.302	82.078	342.257

Source: GAO analysis of U.S. Census Bureau data as retrieved from the U.S. International Trade Commission Interactive Trade DataWeb (accessed Feb. 9, 2017). | GAO-17-515R

Notes: The top 10 countries—China (including Hong Kong) through Switzerland—account for 99.5 percent of the total customs value of U.S. e-cigarette imports. See table 2 for a complete list of countries. The numbers may not add up precisely because of rounding.

^aHarmonized Tariff Schedule (HTS) number 3824.90.2840—replaced with 3824.99.2840 on January 1, 2017—covered e-cigarette liquid containing 5 percent or more by weight of nicotine.

^bHTS number 3824.90.9280—replaced with 3824.99.9280 on January 1, 2017—covered e-cigarette liquid containing less than 5 percent by weight of nicotine. In this table, customs value for HTS number 3824.90.9280 covers the period from February through December 2016 because of an error in the January 2016 data. According to U.S. Census Bureau officials, the corrected January 2016 data for HTS number 3824.90.9280 will be reflected in the revised 2016 data that will be released in the summer of 2017.

^cHTS number 8543.70.9930—which replaced 8543.70.9630 on July 1, 2016—covers e-cigarette devices imported with cartridges filled with liquid containing nicotine.

^dHTS number 8543.70.9940—which replaced 8543.70.9640 on July 1, 2016—covers e-cigarette devices imported with cartridges filled with nicotine-free liquid.

^eHTS number 8543.90.8850 covers major e-cigarette parts, including cartridges containing heating elements and filled with liquid containing nicotine, that are imported separately from devices.

^fHTS number 8543.90.8860 covers major e-cigarette parts, including cartridges containing heating elements and filled with nicotine-free liquid, that are imported separately from devices.

Table 4: Quantity and Customs Value of E-cigarette Liquid and Devices Imported into the United States in 2016

Liquid	Quantity (kg)	Customs value (dollars)
Liquid with 5 percent or more of nicotine (January–December) ^a	481,400	26,617,601
Liquid with less than 5 percent of nicotine (February–December) ^b	110,994	2,888,820
Devices	Quantity (number)	Customs value (dollars)
Devices with nicotine (July–December) ^c	5,637,744	26,066,916
Devices without nicotine (July–December) ^d	5,311,204	97,867,572

Source: GAO analysis of U.S. Census Bureau data as retrieved from the U.S. International Trade Commission's Interactive Trade DataWeb (accessed Feb. 9, 2017). | GAO-17-515R

Notes: Tracking of quantity of imported e-cigarette liquid took effect on January 1, 2016; tracking of quantity of imported e-cigarette devices began on July 1, 2016.

^aHarmonized Tariff Schedule (HTS) number 3824.90.2840—replaced with 3824.99.2840 on January 1, 2017—covered e-cigarette liquid containing 5 percent or more by weight of nicotine.

^bHTS number 3824.90.9280—replaced with 3824.99.9280 on January 1, 2017—covered e-cigarette liquid containing less than 5 percent by weight of nicotine. In this table, quantity and customs value for HTS number 3824.90.9280 cover the period from February through December 2016 because of an error in the January 2016 data. According to U.S. Census Bureau officials, the corrected January 2016 data for HTS number 3824.90.9280 will be reflected in the revised 2016 data that will be released in the summer of 2017.

^cHTS number 8543.70.9930—which replaced 8543.70.9630 on July 1, 2016—covers e-cigarette devices imported with cartridges filled with liquid containing nicotine.

^dHTS number 8543.70.9940—which replaced 8543.70.9640 on July 1, 2016—covers e-cigarette devices imported with cartridges filled with nicotine-free liquid.

Table 5: Customs Value of U.S. E-cigarette Imports by Port of Entry in 2016

34 ports of entry, in actual dollars

Port of entry	Customs value ^a	
	Dollars	Percentage
Cleveland, OH	83,828,226	24.49
Los Angeles, CA	79,065,697	23.10
Savannah, GA	48,324,446	14.12
Norfolk, VA	33,524,990	9.80
Seattle, WA	32,532,897	9.51
Miami, FL	11,033,970	3.22
Detroit, MI	10,146,590	2.96
Laredo, TX	6,661,991	1.95
Charlotte, NC	6,465,758	1.89
Chicago, IL	5,820,868	1.70
San Francisco, CA	5,807,383	1.70
New York, NY	5,240,342	1.53
New Orleans, LA	3,112,414	0.91
EI Paso, TX	1,814,928	0.53
Nogales, AZ	1,688,568	0.49
Buffalo, NY	1,378,946	0.40
Boston, MA	995,126	0.29
San Diego, CA	882,153	0.26
Dallas-Fort Worth, TX	826,516	0.24
Tampa, FL	618,252	0.18
Great Falls, MT	598,996	0.18
Philadelphia, PA	531,016	0.16
Anchorage, AK	439,289	0.13
St. Louis, MO	352,094	0.10
Charleston, SC	156,941	0.05
Houston-Galveston, TX	144,425	0.04
Columbia-Snake, OR	87,672	0.03
Ogdensburg, NY	65,006	0.02
Baltimore, MD	52,500	0.02
Washington, DC	31,565	0.01
Portland, ME	14,153	0.00
Minneapolis, MN	6,920	0.00
St. Albans, VT	4,129	0.00
Honolulu, HI	2,541	0.00
Total	342,257,308	100.00

Source: GAO analysis of U.S. Census Bureau data as retrieved from the U.S. International Trade Commission's Interactive Trade DataWeb (accessed Feb. 9, 2017). | GAO-17-515R

Notes: The port of entry is where imported goods clear U.S. customs and may differ from the port of unlading where goods are unloaded from the importing vessel or aircraft.

^aPort-of-entry totals for customs value cover the entire calendar year 2016 for all e-cigarette Harmonized Tariff Schedule (HTS) numbers except HTS number 3824.90.9280. Customs value for HTS number 3824.90.9280 covers the period from February through December 2016 because of an error in the January 2016 data. According to U.S. Census Bureau officials, the corrected January 2016 data for HTS number 3824.90.9280 will be reflected in the revised 2016 data that will be released in the summer of 2017.

Agency Comments

We provided a draft of this report to USITC, CBP, and Census. We received technical comments from USITC and incorporated the comments as appropriate.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to appropriate congressional committees, to the Chairman of the U.S. International Trade Commission, the Commissioner of U.S. Customs and Border Protection, and the Director of the U.S. Census Bureau. In addition, the report will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-3149 or gootnickd@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are Celia Thomas (Assistant Director), Sada Aksartova, and Grace Lui.

Sincerely yours,



David Gootnick
Director, International Affairs and Trade

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