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Economic and Social Contributions of the US Personal Care Products Industry

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The Personal Care Products Council

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Executive Summary

The personal care products industry includes a wide range of products dedicated to health and beauty, including soaps, perfume, sunscreen, hair and skin care products, cosmetics, and toothpaste. These products are staples of US consumers and are used by all ages. Industry members develop, manufacture, market, and distribute personal care products for use at home and in salons and spas. The industry is composed of three primary segments:

- **Manufacturing**. While globalization has led to the rise of manufacturing abroad, domestic personal care product manufacturing provides the majority of the products for the US market and, furthermore, exports of industry products exceed imports.
- **Distribution.** Wholesalers and retailers distribute personal care products to consumers, either directly to final customers or through service providers. This segment of the industry, which includes employment in department stores and general retailers that sell personal care products, has nearly tripled over the last 30 years.
- **Personal care services.** The service segment includes barber shops, beauty salons, and nail salons. Personal care services provide vital opportunities to small businesses and historically disadvantaged groups.

The Personal Care Products Council engaged PwC to quantify the economic and social contributions of the US personal care products industry at the national and state levels. In evaluating the total economic contribution of the US personal care products industry, this report considers three separate channels—direct, indirect, and induced impacts:

1. ***Direct impacts*** are the economic contributions directly attributable to the industry, including the jobs, labor income, and contribution to gross domestic product ("GDP") *within* the personal care products industry.
2. ***Indirect impacts*** are the economic contributions attributable to the activities of upstream suppliers to the industry. Indirect impacts arise from economic activity in other industries resulting from the personal care products industry's purchases of intermediate inputs from those industries.
3. ***Induced impacts*** are the economic contributions attributable to the personal consumption expenditures of employees and business owners in the personal care products industry and its supply chain.

National Economic Contributions

Including direct, indirect, and induced economic activity, in 2018, the personal care products industry was responsible for 3.9 million jobs, $170.5 billion in labor income, $267.3 billion in GDP, and $64.8 billion in tax payments at the federal, state, and local levels. Industry-related employment represents 1.9 percent of total US employment (see **Table E-1**).

Table E-1. Total Contribution of the Personal Care Products Industry to the US Economy, 2018

Item	Direct Impact	Indirect & Induced Impacts	Total Impact	Percent of US Total
Jobs [1]	2,355,200	1,558,700	3,913,900	1.9%
Labor income ($ billions) [2]	$80.4	$90.1	$170.5	1.4%
Contribution to GDP ($ billions)	$113.5	$153.7	$267.3	1.3%
Taxes ($ billions) [3]	$30.8	$34.0	$64.8	n.a.[4]

Source: PwC calculations using data from the US Bureau of Economic Analysis, the Census Bureau, and the Bureau of Labor Statistics and the IMPLAN modeling system (2017 database). Numbers may not sum to totals due to rounding.

[1] Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

[2] Labor income is defined as wages and salaries and benefits as well as proprietors' income.

[3] Includes federal, state, and local government taxes.

[4] A consistent set of tabulations of federal, state, and local government tax collections is not yet available for 2018.

Based on government data, the industry directly employs 2.4 million workers, primarily in the service sector (1.7 million jobs). An additional 1.6 million jobs are attributable to indirect and induced economic activity associated with the industry.

As government data likely understate employment in the direct selling segment of the industry, these employment estimates may be conservative. Direct sellers, an important part of the industry's sales force, typically work out of their homes and rely on personal contacts to sell their products. Based on data from the Direct Sellers Association, it is estimated that the number of individuals in the direct selling segment of the industry who are not counted in government data could add as much as 1.7 million jobs to the total.

Economic Contributions by State

The personal care products industry makes widespread economic contributions in all 50 states and the District of Columbia. The states with the largest number of jobs directly and indirectly supported by the personal care products industry are California, Texas, Florida, New York, and Ohio (see **Table E-2**).

As a percentage of total state employment, jobs directly and indirectly supported by the personal care products industry were highest in New Jersey (3.4%), followed by Ohio (2.8%), North Carolina (2.8%), Tennessee (2.4%), and Illinois (2.3%) (see **Figure E-1**).

Table E-2. Total Economic Contributions of the Personal Care Products Industry, by State, 2018

State	Jobs [1]		Labor Income [2]		Contribution to GDP		Taxes [3]
	Count	Percent of State Total	Millions of Dollars	Percent of State Total	Millions of Dollars	Percent of State Total	Millions of Dollars
California	469,180	1.9%	22,810	1.3%	36,355	1.2%	9,698
Texas	364,900	2.1%	15,900	1.5%	25,485	1.4%	5,362
Florida	254,650	2.0%	9,383	1.5%	14,189	1.4%	3,390
New York	244,710	1.9%	12,151	1.2%	19,591	1.2%	5,895
Ohio	199,910	2.8%	8,687	2.1%	16,668	2.5%	3,657
New Jersey	191,020	3.4%	10,091	2.5%	15,988	2.6%	4,410
Illinois	181,390	2.3%	8,103	1.5%	12,967	1.5%	3,078
Pennsylvania	177,580	2.3%	8,424	1.7%	12,756	1.6%	3,097
North Carolina	167,700	2.8%	6,825	2.0%	11,627	2.1%	2,555
Georgia	133,290	2.1%	4,298	1.2%	6,698	1.1%	1,380
Michigan	103,010	1.8%	3,810	1.2%	5,988	1.1%	1,393
Tennessee	100,250	2.4%	4,277	1.8%	6,549	1.8%	1,541
Virginia	82,880	1.6%	3,421	1.0%	4,882	0.9%	1,236
Indiana	76,060	1.9%	3,060	1.4%	4,887	1.3%	1,036
Missouri	75,410	2.0%	3,091	1.5%	4,975	1.6%	1,025
All Other	1,091,960	1.6%	46,144	1.1%	67,659	1.0%	16,086
US Total	**3,913,900**	**1.9%**	**170,477**	**1.4%**	**267,263**	**1.3%**	**64,841**

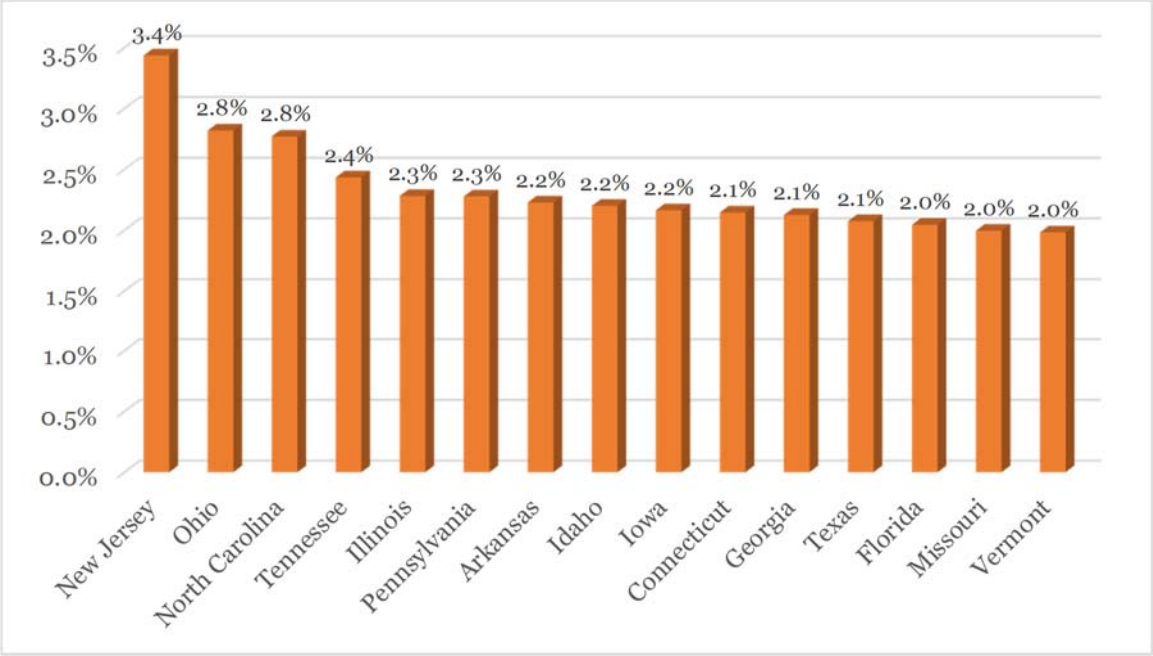
Source: PwC calculations using data from the US Bureau of Economic Analysis, the Census Bureau, and the Bureau of Labor Statistics and the IMPLAN modeling system (2017 database). Numbers may not sum to totals due to rounding.

[1] Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

[2] Labor income is defined as wages and salaries and benefits as well as proprietors' income.

[3] Includes federal, state, and local government taxes.

Figure E-1. Personal Care Products Industry's Total Employment Contribution as a Share of Total State Employment, 2018 [Top 15 States]



Source: PwC calculations using data from the US Bureau of Economic Analysis, the Census Bureau, and the Bureau of Labor Statistics, and the IMPLAN modeling system (2017 database).

Other Economic and Social Contributions

The industry also makes important social contributions through charitable contributions, environmental stewardship, opportunities for women and minorities, and promotion of small business formation.

- **International Trade:** Personal care products manufacturers generate a surplus in the balance of trade, with exports of personal care products more than 35 percent higher than imports in 2018. The industry generated the second largest trade surplus in the manufacturing sector, behind petroleum and coal products.[1] Personal care product manufacturers generate the largest trade surplus relative to the value of domestic shipments of all manufacturing industries.
- **Opportunities for Women:** Compared to the national industry average, the personal care products industry employs a larger percentage of women and minorities. Women make up nearly 77 percent of the personal care products industry's workforce, compared to 47 percent across all industries. Non-whites account for 33 percent of the industry's workforce, compared to 22 percent across all industries.
- **Opportunities for Small Businesses:** Firms with fewer than 10 employees account for 34 percent of the industry's employment and firms with fewer than 50 employees account for nearly 70 percent. Small businesses in the personal care products industry provide opportunities and create new jobs. Personal care products

[1] For purposes of this comparison, all other manufacturing industries are defined using the 3-digit NAICS industries within the manufacturing sector.

companies with fewer than 100 employees accounted for the creation of more than 29,000 jobs nationwide during 2012.

- **Occupations:** The personal care products industry offers a wide range of occupations, including more than 7,200 jobs in science, technology, engineering, and mathematics (STEM). STEM jobs account for 10 percent of all jobs at personal care products manufacturers.
- **Charitable Contributions:** On average, personal care products manufacturers contribute more of their receipts to charity than other manufacturing sectors. These contributions help improve the communities where the personal care products companies operate.
- **Research and Development:** The rate of growth in R&D spending by personal care products manufacturers exceeded that of other manufacturers between 2007 and 2016. The Personal Care Product Industry now accounts for 1.1 percent of all manufacturing R&D.
- **Environmental Impact:** Relative to 2017, major industry participants increased sales in 2018 without increasing global warming emissions. On average, personal care products manufacturers consume less electricity relative to sales than other manufacturers.

Introduction

I. Introduction

The personal care products industry includes a wide range of products dedicated to health and beauty, including perfume, sunscreen, hair and skin care products, cosmetics, and toothpaste. These products are staples of US consumers and are used by all ages. Industry members develop, manufacture, market, and distribute personal care products for use at home and in salons and spas.

The industry is composed of manufacturers, distributors, and service providers:

- **Manufacturing**. While globalization has led to the rise of manufacturing abroad, domestic personal care product manufacturing provides the majority of the products for the US market and, furthermore, exports of industry products exceed imports.
- **Distribution.** Wholesalers and retailers distribute personal care products to consumers, either directly to final customers or through service providers. This segment of the industry, which includes employment in department stores and general retailers that sell personal care products, has nearly tripled over the last 30 years.[2]
- **Personal care services.** The service segment includes barber shops, beauty salons, and nail salons. Personal care services provide opportunities to small businesses and historically disadvantaged groups.

At each stage of the personal care products supply chain, employment is created, income is earned, value is generated, and taxes are paid. However, the economic contribution is greater than these direct effects. Each stage of the production and delivery process relies on suppliers from other parts of the economy. Payrolls are spent by employees, generating even more activity. Additional employment, labor income, value added, and taxes are generated as a result of these indirect and induced activities.

These economic measures provide one perspective on the personal care products industry. The industry also makes important social contributions through charitable contributions, environmental stewardship, opportunities for women and minorities, and promotion of small business formation.

The Personal Care Products Council engaged PricewaterhouseCoopers to quantify the economic and social contributions of the industry. In evaluating the total economic contribution of the US personal care products industry, this report considers three separate channels—the direct, indirect, and induced impacts:

1. ***Direct impacts*** are the economic contributions directly attributable to the industry, including the jobs, labor income, and gross domestic product ("GDP") *within* the personal care products industry.
2. ***Indirect impacts*** are the economic contributions attributable to the activities of upstream suppliers to the industry. In other words, indirect impacts arise

[2] In particular, employment in NAICS sector 446120 (Cosmetics, Beauty Supplies, and Perfume Stores) grew by 200 percent between 1990 and October 2019.

from economic activity in other industries resulting from the personal care products industry's purchases of intermediate inputs from those industries.

3. ***Induced impacts*** are the economic contributions attributable to the personal consumption expenditures of employees and business owners in the personal care products industry and its supply chain.

The report is organized as follows. **Section II** defines the personal care products industry for purposes of this study. **Section III** estimates the industry's economic contributions at the national and state levels. **Section IV** discusses the industry's other economic and social contributions. Additional detail on the industry's economic contributions are provided at the state level in **Appendix A**. The data sources and methodology used to estimate economic impacts are discussed in **Appendix B**.

Industry Definition

II. Industry Definition

For purposes of this report, the personal care products industry is divided into three primary segments: (1) manufacturing, (2) distribution, and (3) personal care services:

- Manufacturing includes development, production, and marketing of personal care products.
- Distribution includes transportation, wholesaling, and retailing of these products. Retail activities include the sale of personal care products in a variety of retail establishments, such as department stores and drug stores.
- Personal care services includes spas, hair and nail salons, and barber shops that utilize personal care products.

The industry can be defined by reference to the North American Industry Classification System (NAICS) used by US government statistical agencies. In particular, the manufacturing segment of the personal care products industry is composed of toilet preparation manufacturing (NAICS 325620) and a portion of the soap and other detergent manufacturing (NAICS 325611) sectors.[3] The personal care services segment is composed of barber shops (NAICS 812111), beauty salons (NAICS 812112), nail salons (NAICS 812113), and a portion of the other personal care services segment (NAICS 812190).[4] The distribution segment includes businesses in the wholesale trade (NAICS 42), retail trade (NAICS 44-45), and transportation and warehousing (NAICS 48-49) sectors that are engaged in the distribution of personal care products from the manufacturer to final consumers.

Table 1 (below) provides estimates of gross output of the personal care products industry by segment. Gross output is a measure of an industry's total sales or receipts, including sales to final consumers and sales to other businesses. Total sales of personal care products and services amounted to $188.5 billion in 2018.

[3] Using data on sales by product line from the *2016 Annual Survey of Manufacturers*, PwC estimates that 24.7 percent of NAICS sector 325611 is engaged in the manufacture of personal care products.
[4] Based on sales by product line from the *2012 Economic Census*, it is estimated that 21.6 percent of NAICS sector 812199 is engaged in providing services related to the personal care products industry.

Table 1. Gross Output of the Personal Care Products Industry, 2018 ($ billions)

NAICS Code	NAICS Description	Gross Output
Manufacturing		
325611	Soap and other detergent manufacturing	$8.1
325620	Toilet preparation manufacturing	$48.9
	Total personal care products manufacturing	*$56.9*
Distribution		
42	Wholesale trade	$14.9
44-45	Retail trade	$40.6
48	Transportation	$2.2
	Total distribution of personal care products	*$57.7*
Services		
8121	Personal care services	$73.8
	Total personal care services	*$73.8*
Total Personal Care Products Industry		***$188.5***

Source: PwC calculations using data from the IMPLAN modeling system (2017 database).
Numbers may not sum to totals due to rounding.

Economic Contributions

III. Economic Contributions

In 2018, the average US household spent over $750 on personal care products and services.[5] Industry products and services are purchased by individuals of all ages; for example, households led by individuals age 75 and over spent over $570 annually on average.[6] Between 1990 and 2018, employment in the US personal care products industry increased by 59 percent, while total US nonfarm employment increased by 37 percent. Much of the growth in the personal care products industry is attributable to the services segment, where employment increased by 81 percent over this period.[7]

The economic contribution of the personal care products industry can be separated into three components – direct, indirect and induced impacts:

- **Direct Impacts** result from activities directly attributable to the industry, such as the activities of personal care products manufacturers and personal care service providers. Additional direct effects are attributable to the activities of transportation companies, wholesalers, and retailers involved in the distribution of personal care products. Retail sector activity includes sales in a variety of settings, such as department stores, drug stores, and direct sales by individuals.
- **Indirect Impacts** result from the activities of upstream suppliers to the industry. As a part of the production process, manufacturers purchase inputs from their suppliers and those suppliers purchase inputs from other parts of the economy. Similarly, personal care service providers purchase inputs as a part of their operations, such as marketing services, electricity, and office supplies. These upstream activities, whether the production of raw materials by manufacturers or the purchase of advertising by beauty salons, are connected to the personal care products industry.
- **Induced Impacts** result from spending by employees of the personal products care industry and its suppliers. This consumption causes additional economic activity attributable to the personal care products industry.

This study quantifies the direct, indirect, and induced economic contributions of the personal care products industry in terms of jobs, labor income, taxes, and GDP for 2018, the most recent year for which a full, consistent set of data are available. Estimates of these impacts are based on federal government data and the IMPLAN model, which contains industry input-output relationships at the national and state levels.

National Contributions

According to federal government statistics, the personal care products industry directly employed 2.4 million workers in 2018, including both full-time and part-time employees and self-employed individuals. Including indirect and induced impacts, the personal

[5] US Bureau of Labor Statistics, *Consumer Expenditure Survey*, Table 1502, September 2019. Available online at https://www.bls.gov/cex/2018/combined/cucomp.pdf.
[6] US Bureau of Labor Statistics, *Consumer Expenditure Survey*, Table 1300, September 2019. Available online at https://www.bls.gov/cex/2018/combined/age.pdf.
[7] Figures based on data from Quarterly Census of Employment, published by the US Bureau of Labor Statistics, for businesses with paid employees. The personal care products industry figures include the manufacturing segment (which declined by 23 percent between 1990 and 2018) and the services segment. It excludes the distribution segment.

care products industry's total employment contribution to the US economy was 3.9 million jobs, or 1.9 percent of all US employment in 2018 (**Table 2**).

Table 2. Total Economic Contribution of the Personal Care Products Industry to the US Economy, 2018
[Dollar Amounts in $ Billions]

Item	Amount	Percent of US Total
Jobs[1]		
Direct	2,355,200	1.2%
Indirect and Induced	1,558,700	0.8%
Total	3,913,900	1.9%
Labor Income[2]		
Direct	$80.4	0.6%
Indirect and Induced	$90.1	0.7%
Total	$170.5	1.4%
Contribution to GDP		
Direct	$113.5	0.6%
Indirect and Induced	$153.7	0.7%
Total	$267.3	1.3%
Taxes[3]		
Direct	$30.8	n.a.
Indirect and Induced	$34.0	n.a.
Total	$64.8	n.a.

Source: PwC calculations using data from the US Bureau of Economic Analysis, the Census Bureau, and the Bureau of Labor Statistics, and the IMPLAN modeling system (2017 database).
Numbers may not sum to totals due to rounding.
[1] Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
[2] Labor income is defined as wages and salaries and benefits as well as proprietors' income.
[3] Includes federal, state, and local government taxes. A consistent set of tabulations of total federal, state, and local government tax collections from all sources are not yet available for 2018.

The Direct Sellers Association (DSA) estimates that 16.5 million individuals were involved in direct selling in 2018 and that personal care products accounted for 15.6 percent of the total sales by direct sellers.[8] This implies that approximately 2.6 million direct sellers were involved in the sale of personal care products. In contrast, projections of government statistics for direct selling establishments (NAICS sector 45439) show total employment of approximately 913,000 in 2018, most of whom are independent contractors.[9] While some direct sellers of personal care products may be captured in the distribution and services segment of the personal care products industry, the DSA estimates suggest that the federal government data may undercount the number of direct sellers of personal care products.

[8] See http://www.dsa.org/research/industry-statistics.
[9] PwC projections of US Census Bureau data for NAICS 45439, "Other direct selling establishments," show 808,500 businesses without paid employees and employment of 104,720 in other direct selling establishments with paid employees.

Businesses in the personal care products industry paid out $80 billion in labor income in 2018, including wages, salaries and benefits, and proprietors' income. Total labor income associated with the personal care products industry -- including direct, indirect, and induced impacts -- amounted to $170 billion, or 1.4 percent of total US labor income. Across direct, indirect, and induced employment, labor income averaged approximately $43,557 per job in 2018.

The personal care products industry directly contributed $113.5 billion to GDP in 2018. Including indirect and induced impacts, the industry's total contribution to GDP was $267.3 billion, or 1.3 percent of total US GDP.

Finally, including direct, indirect, and induced economic activity, the industry contributed $64.8 billion in tax payments to federal, state, and local governments in 2018.

Table 3, on the next page, provides detail on the US personal care products industry's total economic contributions by industry segment (manufacturing, distribution, and services). The services segment accounted for the greatest share of economic activity directly or indirectly attributed to the personal care products industry.

The services segment directly accounted for 1.7 million jobs, $51.7 billion in labor income, and $55.4 billion in contribution to GDP. Including direct, indirect, and induced impacts, the services segment accounted for 2.4 million jobs, $87.1 billion in labor income, and $118.0 billion in contribution to GDP. Services represented 61 percent of the personal care products industry's total employment contribution, 51 percent of its total labor income contribution, and 44 percent of its total contribution to GDP.

The distribution segment is the second largest component of the industry. The wholesale, retail, and transportation segments that distribute personal care products directly accounted for 598,730 jobs, $21.7 billion in labor income, and $36.4 billion in contribution to GDP. Including direct, indirect, and induced impacts, the distribution segment accounted for 1.1 million jobs, $48.7 billion in labor income, and $82.2 billion in contribution to GDP, representing 27 percent, 29 percent, and 31 percent, respectively, of the industry's total economic contribution. As discussed above, the employment numbers potentially understate the number of individuals involved in direct sales of personal care products.

The manufacturing segment of the personal care products industry directly accounted for 69,900 jobs, $6.9 billion in labor income, and $21.7 billion in contribution to GDP. Average labor income in the manufacturing segment was approximately $99,270 in 2018. The manufacturing segment directly and indirectly supported a total of 487,790 jobs, $34.6 billion in labor income, and $67.1 billion in contribution to GDP. Overall, manufacturing was responsible for approximately 12 percent of the industry's total employment contribution, 20 percent of total labor income contribution, and 25 percent pof total contribution to GDP.

Table 3. Total Economic Contributions of the Personal Care Products Industry, by Segment, 2018
[Dollar Amounts in $ Millions]

NAICS Code	Originating Industry	Jobs [1]			Labor Income [2]			Contribution to GDP		
		Direct	Indirect and Induced	Total	Direct	Indirect and Induced	Total	Direct	Indirect and Induced	Total
Manufacturing Segment										
325611	Soap and other detergent manufacturing	7,470	51,370	58,840	$1,000	$3,355	$4,354	$3,133	$5,686	$8,819
325620	Toilet preparation manufacturing	62,430	366,520	428,950	5,939	24,292	30,231	18,615	39,651	58,266
	Total manufacturing	*69,900*	*417,890*	*487,790*	*$6,939*	*$27,647*	*$34,586*	*$21,748*	*$45,337*	*$67,085*
Distribution Segment										
42	Wholesale trade	61,300	109,540	170,840	5,258	6,404	11,663	10,202	10,756	20,958
44-45	Retail trade	527,220	330,620	857,840	15,684	19,487	35,171	25,119	33,045	58,164
48	Transportation	10,210	19,100	29,310	768	1,140	1,908	1,117	1,942	3,059
	Total distribution	*598,730*	*459,260*	*1,057,990*	*$21,710*	*$27,032*	*$48,741*	*$36,439*	*$45,743*	*$82,181*
Services Segment										
8121	Personal care services	1,686,570	681,550	2,368,120	$51,737	$35,412	$87,149	$55,351	$62,646	$117,997
	Industry Total	2,355,200	1,558,700	3,913,900	$80,385	$90,091	$170,477	$113,538	$153,725	$267,263

Source: PwC calculations using data from the US Bureau of Economic Analysis, the Census Bureau, and the Bureau of Labor Statistics and the IMPLAN modeling system (2017 database).

Note: details may not add to totals due to rounding.

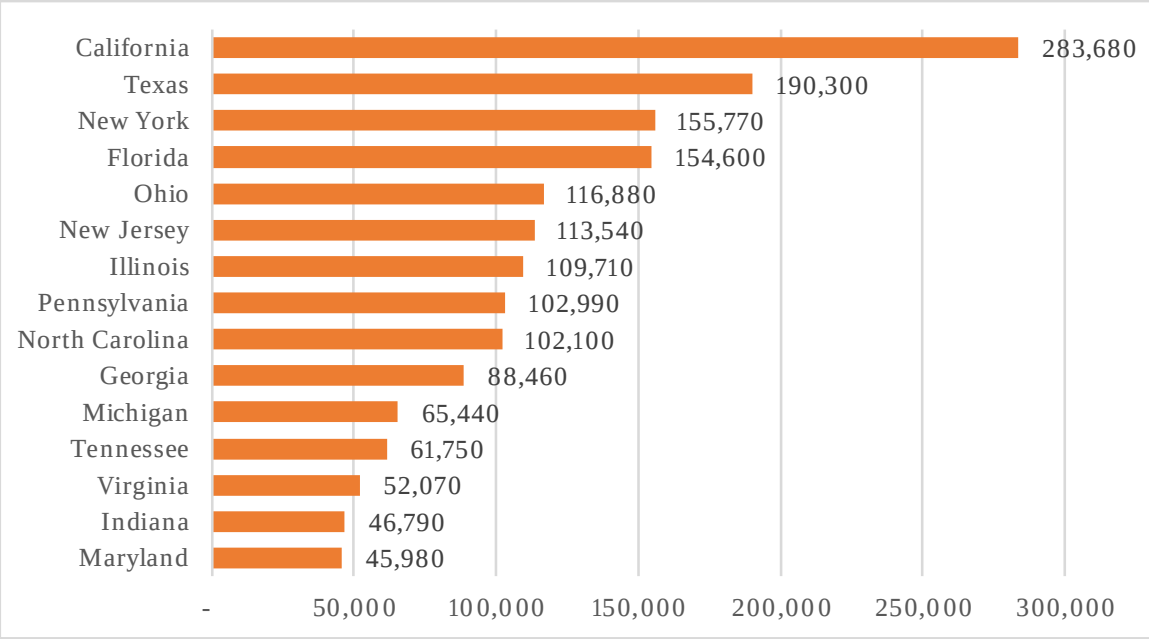
[1] Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.

[2] Labor income is defined as wages and salaries and benefits as well as proprietors' income.

State-Level Contributions

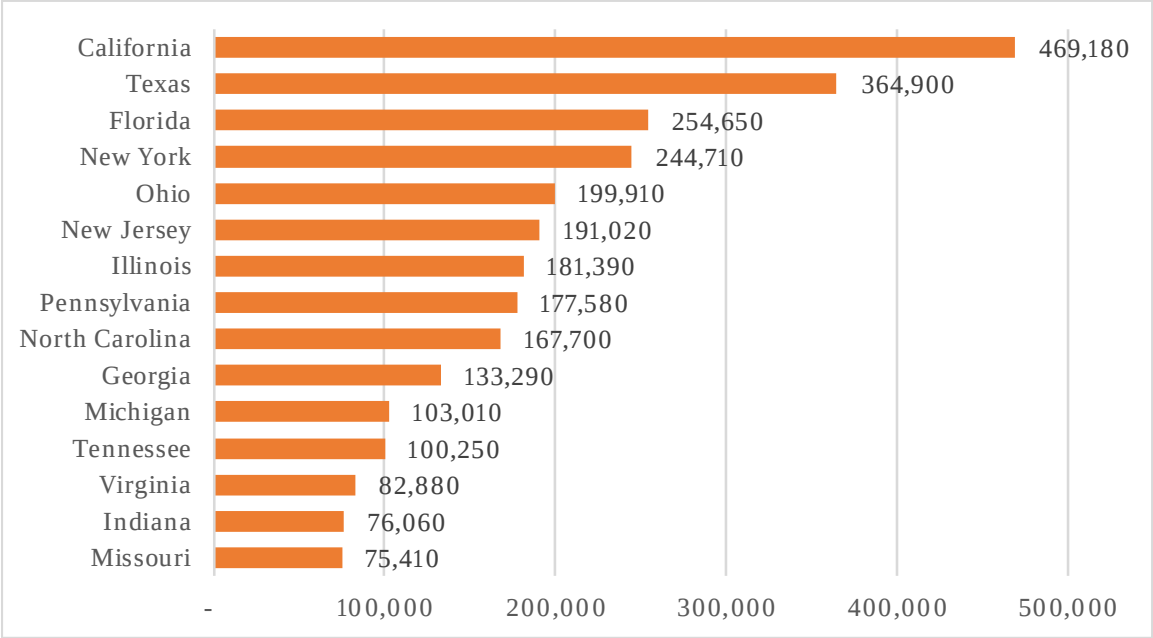
The US personal care products industry has widespread economic contributions in all 50 states and the District of Columbia. The states with the largest number of direct jobs in the personal care products industry in 2018 were California (283,680), Texas (190,300), New York (155,700), Florida (154,600), and Ohio (116,880) (see **Figure 1** below). Combined, these five states accounted for 38 percent of the direct employment in the personal care products industry. These five states also are the largest states in terms of total employment contribution (**Figure 2**).

Figure 1. Direct Jobs in the US Personal Care Products Industry, 2018 [Top 15 States]



Source: PwC calculations using data from the US Bureau of Economic Analysis, the Census Bureau, and the Bureau of Labor Statistics and the IMPLAN modeling system (2017 database).

Figure 2. Total Employment Contribution of the US Personal Care Products Industry, 2018 [Top 15 States]



Source: PwC calculations using data from the US Bureau of Economic Analysis, the Census Bureau, and the Bureau of Labor Statistics and the IMPLAN modeling system (2017 database).

The five states in which the personal care products industry directly or indirectly accounts for the largest share of total state employment are New Jersey (3.4%), Ohio (2.8%), North Carolina (2.8%), Tennessee (2.4%), and Illinois (2.3%).

The direct economic impact of the US personal care products industry is shown by state in **Table 4**, below. The total contribution of the personal care products industry in each of the 50 states and the District of Columbia is shown in **Table 5**.

Table 4. Direct Economic Contributions of US Personal Care Products Industry, by State, 2018

State	Employment[1]		Labor Income[2]		GDP	
	Amount	Percent of U.S. Total	($ Million)	Percent of U.S. Total	($ Million)	Percent of U.S. Total
Alabama	29,740	1.3%	708	0.9%	859	0.8%
Alaska	2,360	0.1%	110	0.1%	99	0.1%
Arizona	36,420	1.5%	1,224	1.5%	1,335	1.2%
Arkansas	22,670	1.0%	740	0.9%	1,179	1.0%
California	283,680	12.0%	10,311	12.8%	15,227	13.4%
Colorado	34,080	1.4%	1,291	1.6%	1,427	1.3%
Connecticut	29,890	1.3%	1,324	1.6%	1,856	1.6%
Delaware	5,640	0.2%	179	0.2%	204	0.2%
District of Columbia	4,270	0.2%	189	0.2%	170	0.2%
Florida	154,600	6.6%	4,589	5.7%	5,821	5.1%
Georgia	88,460	3.8%	2,008	2.5%	2,606	2.3%
Hawaii	6,530	0.3%	246	0.3%	263	0.2%
Idaho	13,980	0.6%	439	0.5%	559	0.5%
Illinois	109,710	4.7%	3,697	4.6%	5,445	4.8%
Indiana	46,790	2.0%	1,521	1.9%	2,228	2.0%
Iowa	27,510	1.2%	1,332	1.7%	1,678	1.5%
Kansas	13,850	0.6%	469	0.6%	598	0.5%
Kentucky	23,560	1.0%	800	1.0%	1,002	0.9%
Louisiana	33,870	1.4%	814	1.0%	1,367	1.2%
Maine	5,950	0.3%	208	0.3%	213	0.2%
Maryland	45,980	2.0%	1,578	2.0%	2,043	1.8%
Massachusetts	39,210	1.7%	1,548	1.9%	1,413	1.2%
Michigan	65,440	2.8%	1,841	2.3%	2,681	2.4%
Minnesota	39,780	1.7%	1,642	2.0%	2,083	1.8%
Mississippi	20,860	0.9%	454	0.6%	658	0.6%
Missouri	44,410	1.9%	1,531	1.9%	2,355	2.1%
Montana	4,910	0.2%	166	0.2%	165	0.1%
Nebraska	11,390	0.5%	387	0.5%	442	0.4%
Nevada	17,130	0.7%	519	0.6%	603	0.5%
New Hampshire	8,490	0.4%	341	0.4%	336	0.3%
New Jersey	113,540	4.8%	4,749	5.9%	7,449	6.6%
New Mexico	8,270	0.4%	260	0.3%	307	0.3%
New York	155,770	6.6%	5,592	7.0%	8,631	7.6%
North Carolina	102,100	4.3%	3,448	4.3%	5,712	5.0%
North Dakota	3,840	0.2%	145	0.2%	162	0.1%
Ohio	116,880	5.0%	4,204	5.2%	8,965	7.9%
Oklahoma	17,320	0.7%	460	0.6%	513	0.5%
Oregon	20,910	0.9%	800	1.0%	826	0.7%
Pennsylvania	102,990	4.4%	3,742	4.7%	5,158	4.5%
Rhode Island	5,860	0.2%	216	0.3%	226	0.2%
South Carolina	27,530	1.2%	770	1.0%	893	0.8%
South Dakota	4,570	0.2%	230	0.3%	256	0.2%
Tennessee	61,750	2.6%	2,148	2.7%	3,074	2.7%
Texas	190,300	8.1%	6,036	7.5%	8,254	7.3%
Utah	18,360	0.8%	495	0.6%	692	0.6%
Vermont	5,100	0.2%	205	0.3%	249	0.2%
Virginia	52,070	2.2%	1,711	2.1%	1,904	1.7%
Washington	38,910	1.7%	1,690	2.1%	1,792	1.6%
West Virginia	6,870	0.3%	227	0.3%	447	0.4%
Wisconsin	28,570	1.2%	976	1.2%	978	0.9%
Wyoming	2,530	0.1%	77	0.1%	133	0.1%
U.S. Total	**2,355,200**	**100%**	**80,385**	**100%**	**113,538**	**100%**

Source: PwC calculations using IMPLAN modeling system (2017 database).
Numbers may not add to total due to rounding.
[1] Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
[2] Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Table 5. Total Economic Contributions of US Personal Care Products Industry, by State, 2018

State	Employment[1]		Labor Income[2]		GDP	
	Amount	Percent of State Total	($ Million)	Percent of State Total	($ Million)	Percent of State Total
Alabama	44,150	1.6%	1,353	1.0%	2,026	0.9%
Alaska	4,080	0.9%	210	0.7%	318	0.6%
Arizona	61,660	1.6%	2,502	1.2%	3,542	1.0%
Arkansas	37,030	2.2%	1,433	1.8%	2,378	1.9%
California	469,180	1.9%	22,810	1.3%	36,355	1.2%
Colorado	59,170	1.5%	2,719	1.1%	3,821	1.0%
Connecticut	49,900	2.1%	2,694	1.5%	4,091	1.5%
Delaware	8,770	1.5%	362	1.0%	570	0.8%
District of Columbia	6,820	0.7%	448	0.4%	538	0.4%
Florida	254,650	2.0%	9,383	1.5%	14,189	1.4%
Georgia	133,290	2.1%	4,298	1.2%	6,698	1.1%
Hawaii	10,770	1.2%	463	0.8%	660	0.7%
Idaho	22,850	2.2%	841	1.7%	1,232	1.6%
Illinois	181,390	2.3%	8,103	1.5%	12,967	1.5%
Indiana	76,060	1.9%	3,060	1.4%	4,887	1.3%
Iowa	45,170	2.2%	2,196	2.0%	3,232	1.7%
Kansas	23,180	1.2%	938	0.9%	1,397	0.8%
Kentucky	39,250	1.5%	1,545	1.2%	2,287	1.1%
Louisiana	49,880	1.8%	1,569	1.1%	2,896	1.1%
Maine	10,300	1.2%	406	1.0%	552	0.9%
Maryland	70,500	1.9%	3,046	1.2%	4,571	1.1%
Massachusetts	64,620	1.3%	3,239	0.9%	4,125	0.7%
Michigan	103,010	1.8%	3,810	1.2%	5,988	1.1%
Minnesota	72,030	1.9%	3,585	1.5%	5,229	1.4%
Mississippi	30,630	1.9%	839	1.2%	1,379	1.2%
Missouri	75,410	2.0%	3,091	1.5%	4,975	1.6%
Montana	8,250	1.2%	306	1.0%	412	0.8%
Nebraska	18,750	1.4%	784	1.0%	1,136	0.9%
Nevada	27,280	1.5%	1,007	1.0%	1,484	0.9%
New Hampshire	14,370	1.6%	673	1.2%	879	1.0%
New Jersey	191,020	3.4%	10,091	2.5%	15,988	2.6%
New Mexico	13,260	1.2%	470	0.9%	735	0.7%
New York	244,710	1.9%	12,151	1.2%	19,591	1.2%
North Carolina	167,700	2.8%	6,825	2.0%	11,627	2.1%
North Dakota	6,500	1.1%	289	0.9%	421	0.8%
Ohio	199,910	2.8%	8,687	2.1%	16,668	2.5%
Oklahoma	27,750	1.2%	982	0.8%	1,464	0.7%
Oregon	36,390	1.4%	1,639	1.1%	2,298	1.0%
Pennsylvania	177,580	2.3%	8,424	1.7%	12,756	1.6%
Rhode Island	9,650	1.5%	420	1.1%	576	1.0%
South Carolina	43,090	1.5%	1,474	1.0%	2,145	0.9%
South Dakota	8,260	1.4%	411	1.3%	565	1.1%
Tennessee	100,250	2.4%	4,277	1.8%	6,549	1.8%
Texas	364,900	2.1%	15,900	1.5%	25,485	1.4%
Utah	30,300	1.5%	1,059	1.0%	1,706	1.0%
Vermont	8,730	2.0%	377	1.7%	538	1.6%
Virginia	82,880	1.6%	3,421	1.0%	4,882	0.9%
Washington	64,020	1.4%	3,234	1.0%	4,497	0.8%
West Virginia	11,330	1.3%	441	1.0%	859	1.1%
Wisconsin	49,260	1.3%	2,038	1.0%	2,805	0.8%
Wyoming	4,020	1.0%	152	0.7%	300	0.8%
U.S. Total	**3,913,900**	**1.9%**	**170,477**	**1.4%**	**267,263**	**1.3%**

Source: PwC calculations using IMPLAN modeling system (2017 database).
Numbers may not add to total due to rounding.
[1] Employment is defined as the number of payroll and self-employed jobs, including part-time jobs.
[2] Labor income is defined as wages and salaries and benefits as well as proprietors' income.

Other Economic and Social Contributions

IV. Other Economic and Social Contributions

In addition to the economic contributions discussed above, the personal care products industry makes other important social contributions. This section quantifies and compares the personal care product industry's social contributions with other manufacturing and services industries.

A. International Trade

Between 1990 and 2018, the value of personal care products exports increased at an average annual rate of 8.4 percent, from $1.9 billion to $18.4 billion. Over the same period, the value of imported personal care products grew from $1.2 billion to $13.6 billion, an average annual growth rate of 9.2 percent. The growth of trade in personal care products has outpaced growth in trade for the overall manufacturing sector. The personal care products industry generated a trade surplus every year over the entire 1990-2018 period, reaching $4.8 billion in 2018, while the manufacturing sector as a whole recorded a trade deficit in each year of this period. The manufacturing sector as a whole posted a trade deficit of $874.8 billion in 2018 (see **Figure 3a** and **Figure 3b** below).

The personal care products industry is one of the few segments of the manufacturing sector that exported more than it imported in 2018 (**Figure 4**). The industry generated the second largest trade surplus in the manufacturing sector, behind petroleum and coal products.[10] Net exports as a percent of total sales was 6.4 percent in 2017 for the personal care products industry, the highest share of any manufacturing sector (see **Table 6**). Petroleum and coal products was the next highest at 6.2 percent.[11]

[10] The comparisons provided in Figure 4 are based on 3-digit NAICS industries in the manufacturing sector.
[11] Trade surplus figures are from the International Trade Administration. Sales by domestic manufacturers are from the Census Bureau. Personal care products manufacturers are represented by soap and detergent manufacturers.

Figure 3a. Personal Care Products Imports and Exports, 1990-2018

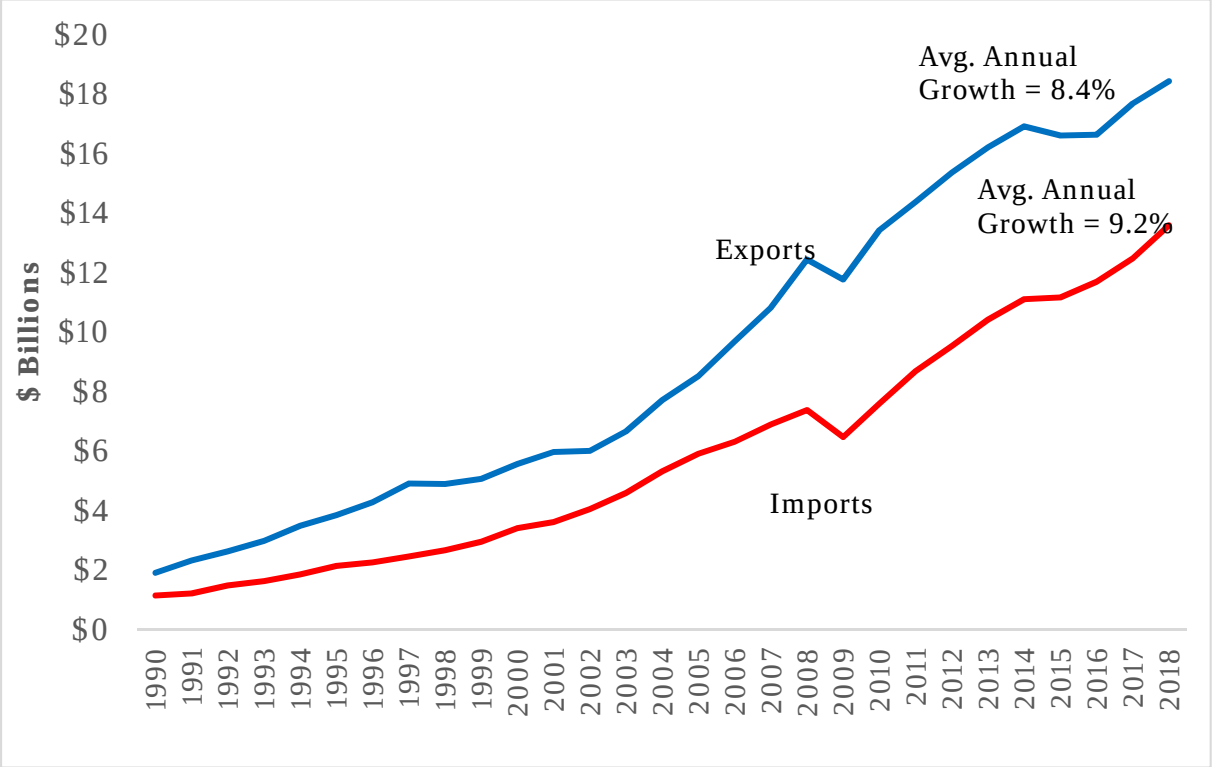
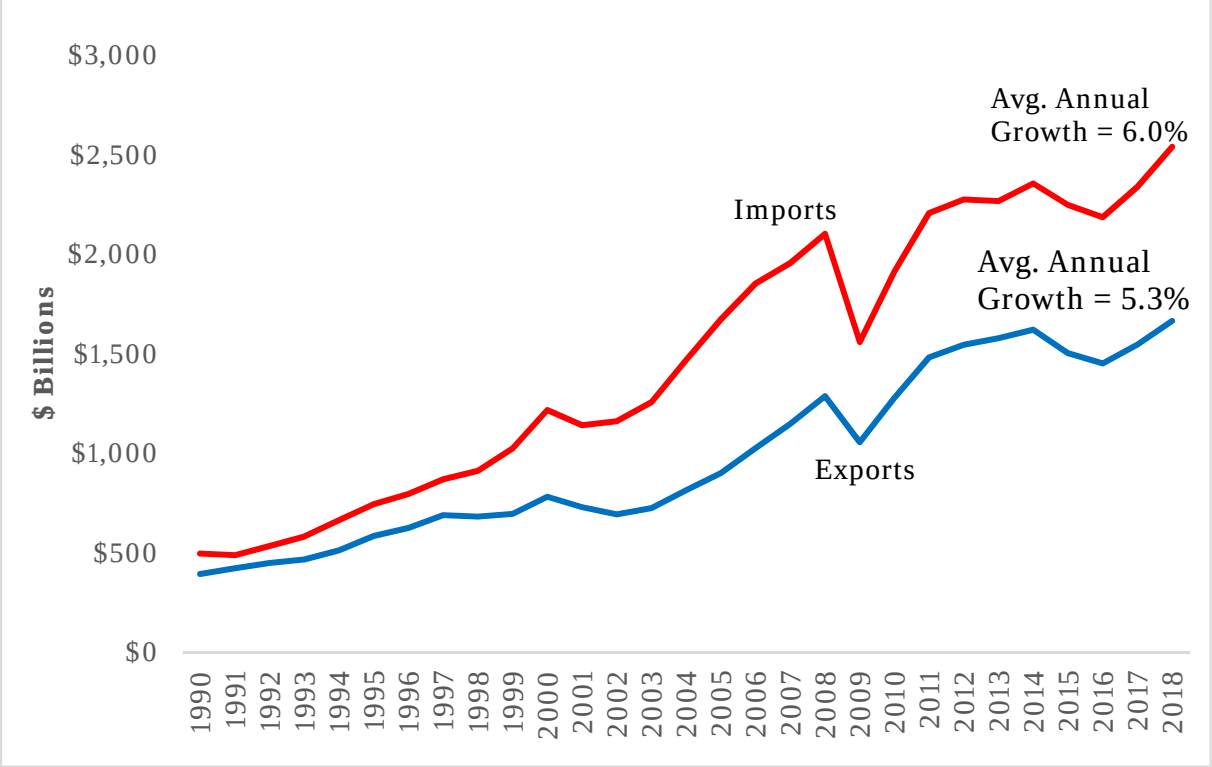
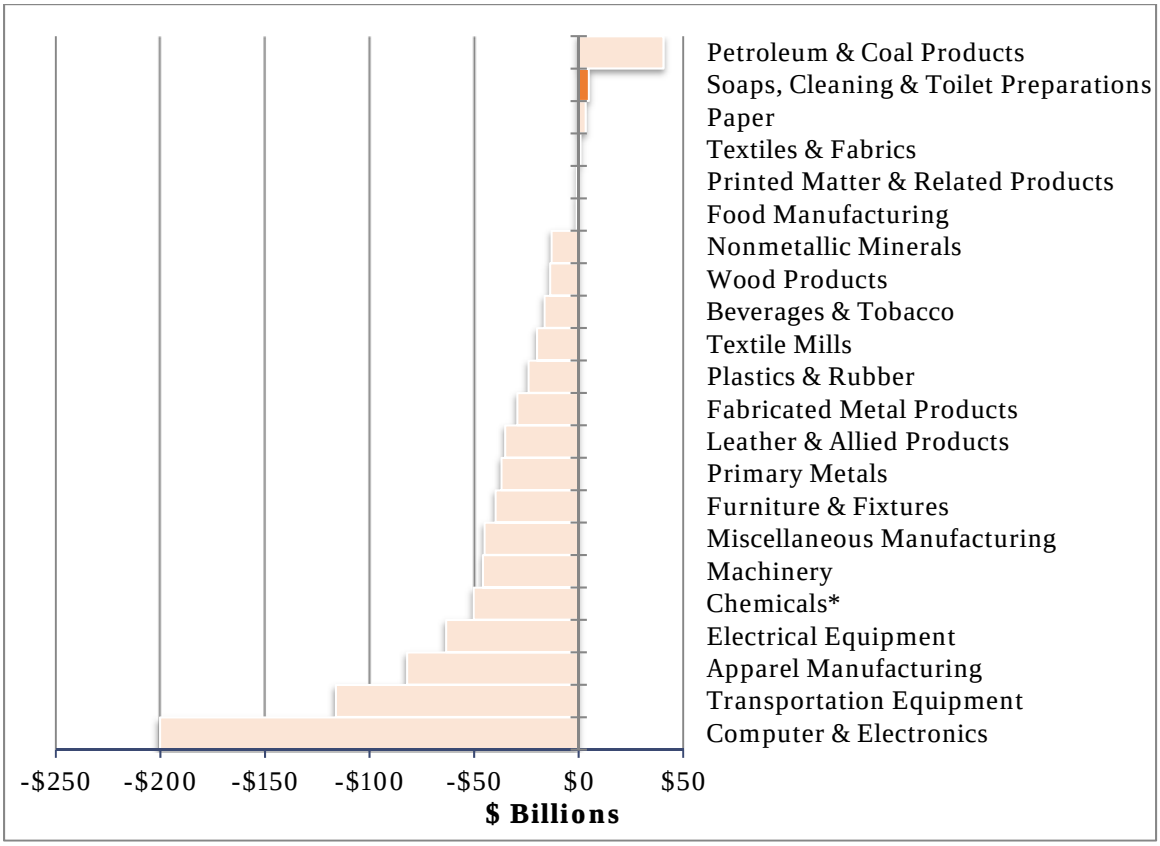


Figure 3b. Total Merchandise Imports and Exports, 1990-2014



Source: International Trade Administration, TradeStats Express.

Figure 4. Manufacturing Trade Balance by Sector, 2018



Source: International Trade Administration, TradeStats Express.
*Excludes Soaps, Cleaning Compounds, and Toilet Preparations Manufacturing, which is shown separately to represent personal care products manufacturers.

Table 6. Balance of Trade as a Percent of Total Sales by Sector, 2018 ($ billions)

NAICS Code	Sector	Balance of Trade	Total Sales	Balance as a % of Sales
3256*	Soaps, Cleaning Compounds & Toilet Preparations	5.2	81.8	6.4%
324	Petroleum & Coal Products	34.5	548.1	6.3%
313	Textiles & Fabrics	1.2	27.9	4.1%
322	Paper	4.6	184.6	2.5%
311	Food & Kindred Products	3.2	784.2	0.4%
323	Printed Matter & Related Products	-0.2	80.9	-0.3%
325**	Chemicals	-30.4	674.6	-4.5%
332	Fabricated Metal Products	-24.0	344.7	-7.0%
326	Plastics & Rubber Products	-19.6	237.5	-8.3%
327	Nonmetallic Mineral Products	-11.0	127.3	-8.6%
333	Machinery	-35.1	356.6	-9.8%
312	Beverages & Tobacco Products	-15.7	155.7	-10.1%
336	Transportation Equipment	-106.5	961.9	-11.1%
321	Wood Products	-12.3	107.6	-11.5%
	All Manufacturing	**-194.9**	**4,683.5**	**-4.2%**
331	Primary Metal Manufacturing	-35.4	221.0	-16.0%
339	Miscellaneous Manufactured Commodities	-40.9	148.4	-27.5%
335	Electrical Equipment, Appliances & Components	-54.1	122.4	-44.2%
337	Furniture & Fixtures	-36.2	74.5	-48.6%
334	Computer & Electronic Products	-192.1	310.2	-61.9%
314	Textile Mill Products	-18.4	23.0	-79.8%
316	Leather & Allied Products	-33.8	4.8	-702.3%
315	Apparel & Accessories	-79.0	10.4	-759.4%

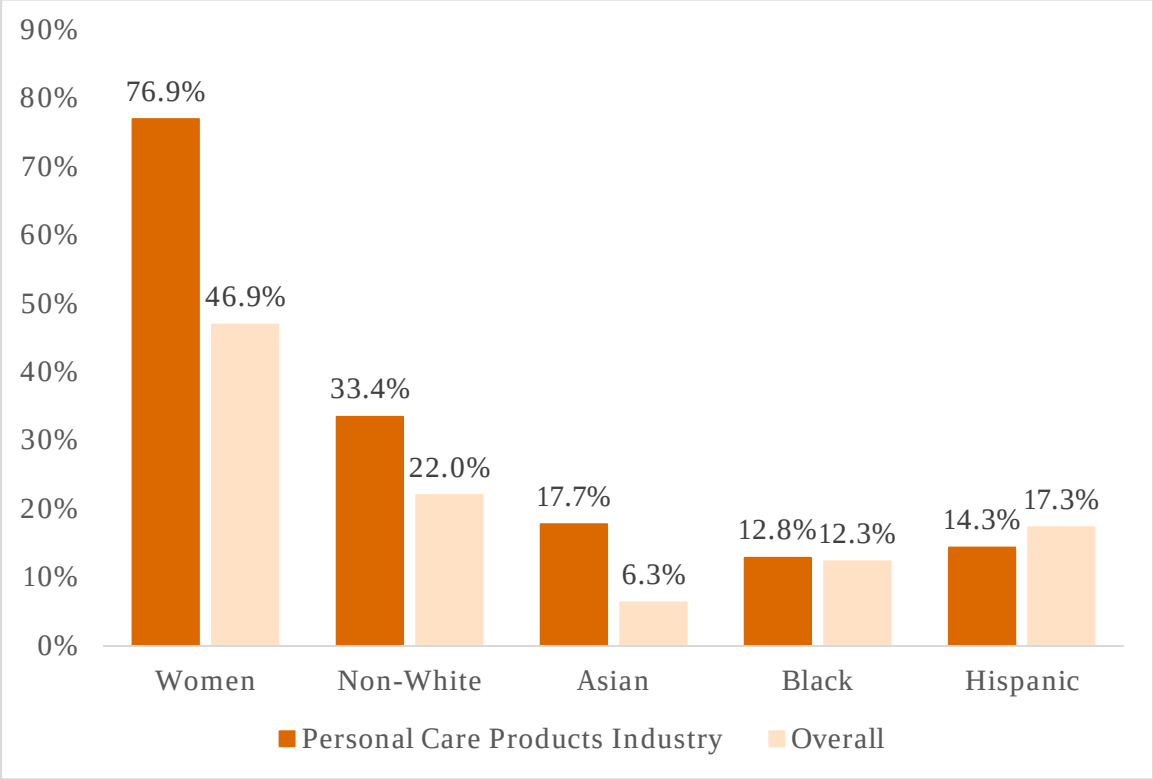
Source: PwC calculations based on data from the U.S. Census Bureau.
*Includes detergents and other products that are not personal care products.
**Excludes NAICS 3256.

B. Diversity

The personal care products industry has a diverse workforce. According to data from the Current Population Survey, conducted by the US Bureau of Labor Statistics, in 2018 women accounted for 76.9 percent of all employment in the personal care products industry, compared to 46.9 percent across all industries. As shown below, Asians accounted for 17.7 percent of all employment in the industry, Hispanics accounted for 14.3 percent of all employment, and African Americans accounted for 12.8 percent.

Minorities comprised a larger share of the personal care products industry's workforce than the economy-wide average in 2018. Overall, 33.4 percent of all employees in the personal care products industry identify as non-White, compared to 22.0 percent across all industries (**Figure 5**).

Figure 5. Composition of the US Workforce: Personal Care Products and All Industries, 2018

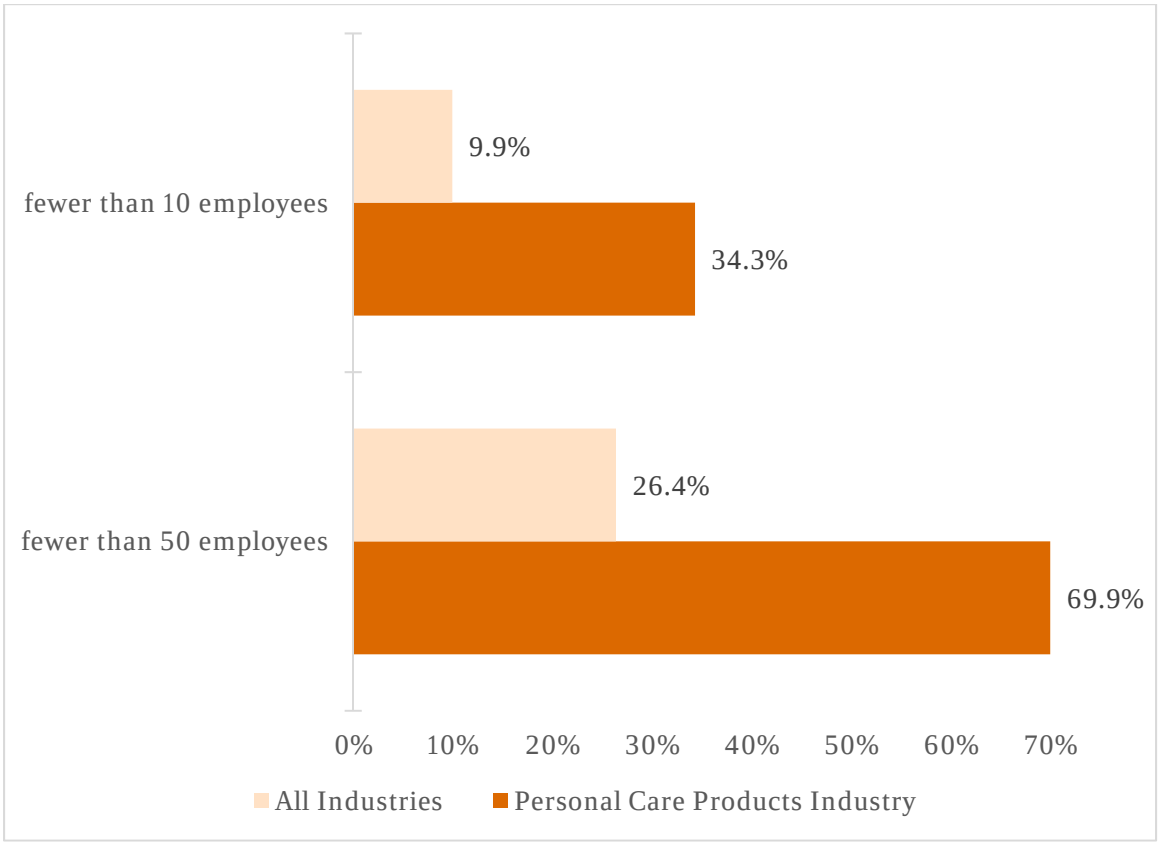


Source: US Bureau of Labor Statistics, Current Population Survey (CPS), Table 18.
Results based on employment in surveyed housing units employed in NAICS sectors 325610, 325620, 812111, 812112, 812113, and 812190.

C. Opportunities for Small Businesses and Job Creation

The personal care products industry consists of a large number of relatively small entrepreneurial businesses. In 2016, the latest year for which data are available, there were 1,276 manufacturing firms and 110,831 service providing firms with paid employees in the personal care products industry that have fewer than 50 employees. Over 34 percent of total employment in the personal care products industry was in firms with fewer than 10 employees, compared to 10 percent in all industries; 70 percent of total employment in the personal care products industry was in firms with fewer than 50 employees firm-wide, compared to 26 percent in all industries (see **Figure 6**).

Figure 6. Share of Employees by Size of US Business: Personal Care Products and All Industries, 2016



Source: PwC calculations using data from US Census Bureau, *Statistics of US Businesses 2016*. Data include all businesses in NAICS 325611, 325620, and 8121.

From 2015 to 2016, direct employment in personal care products manufacturing and services businesses increased by 28,640 jobs. These new jobs represent jobs added at new and expanding establishments (135,720) less jobs lost at establishments that closed or contracted (107,080) during 2016. Overall, the number of jobs in the personal care products industry increased by 3.7 percent in 2016, compared to an increase of 2.2 percent across all industries.

Much of this expansion was in small businesses. Personal care products businesses with less than 100 employees had a net increase of 29,060 jobs in 2016, of which nearly 22,700 were in companies with less than 10 employees. In contrast personal care products manufacturing and services businesses with more than 100 employees lost 420 jobs in 2016, primarily due to contractions among existing establishments.

According to data from the BLS, overall paid employment in personal care products manufacturing and personal care services increased by 15.7 percent over the past decade, from 560,279 in 2009 to 648,452 workers in 2018.

D. Occupations in the Personal Care Products Industry

The personal care products industry encompasses a wide range of occupations, including jobs in sales, production, and services. Within the manufacturing segment, jobs range from production workers, management and supervisors, to chemists and biologists. In 2018, personal care products manufacturing included more than 7,200 jobs in science, technology, engineering, and mathematics (STEM) occupations, accounting for 10.3 percent of all jobs in the manufacturing segment (**Table 7**). In comparison, STEM occupations account for 6.4 percent of all jobs in nondurable goods manufacturing.

Table 7. Personal Care Product Manufacturing Employment in Science, Technology, Engineering, and Mathematics Occupations, 2018

Occupation/Group	Paid Employees	Percent of total personal care product manufacturing employment
STEM Occupations		
Scientists, chemists and related occupations	3,720	5.3%
Computer and information systems related occupations	1,140	1.6%
Engineering occupations	2,020	2.9%
Other occupations	350	0.5%
Subtotal	***7,210***	***10.3%***
Non-STEM Occupations	62,690	89.7%
All Occupations	**69,910**	**100.0%**

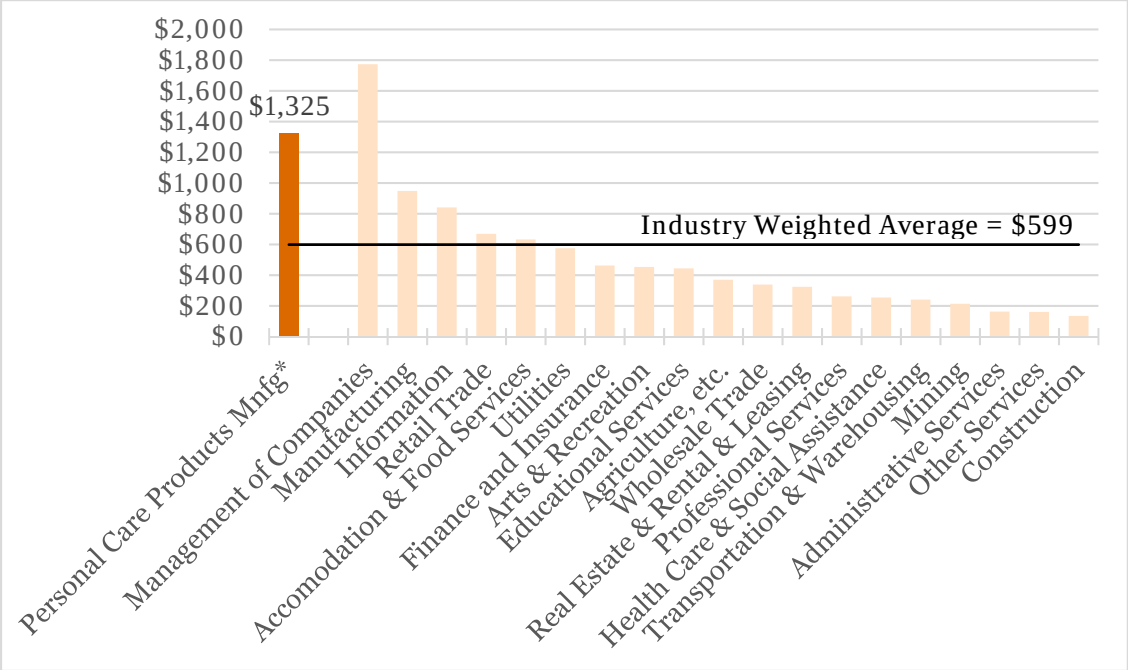
Source: PwC calculations based on data from US Bureau of Labor Statistics, *Occupational Employment Statistics* database (May 2018). Details may not add to totals due to rounding.
Personal care products manufacturing includes soaps and other detergents (NAICS 325611) and toilet preparations (NAICS 325620).

The largest number of STEM jobs in personal care products manufacturing were scientists, chemists, and related occupations (3,720), followed by engineering occupations (2,020), and computer and information technology occupations (1,140).

E. Charitable Contributions

In 2015, the latest year for which data were available, corporate manufacturers of personal care products contributed $144 million to charitable causes, as reported on tax returns. For every $1 million in revenue, personal care product manufacturers made charitable contributions of approximately $1,300; the second highest amount of all major industry sectors. Across all industries corporate charitable contributions averaged $599 per $1 million of revenues in 2015, less than half of the personal care products industry (**Figure 7**).

Figure 7. Charitable Contributions per $1 Million in Receipts, 2015



Source: IRS, Statistics of Income Division, *Corporation Complete Report, 2015* (Table 5.1). *Data include all corporations in NAICS 3256 (Soap, Cleaning Compound, and Toilet Preparation Manufacturing).

F. Research and Development

Based on National Science Foundation data, personal care products manufacturers increased their spending on research and development (R&D) at an average annual rate of 5.2 percent over the ten-year period from 2007 to 2016 (**Table 8**). In comparison, all manufacturers increased R&D spending by 3.3 percent per year over the same period. In 2016, R&D in personal care products manufacturing accounted for 1.1 percent of all US manufacturing R&D, up from 0.9 percent in 2007.

Table 8. Research and Development Spending, 2007-2016
[Dollar Amounts in $ Billions]

	2007	2016	Average Annual Growth Rate, 2007-16
Total manufacturing	$187.5	$250.5	3.3%
Personal care products manufacturing	$1.8	$2.8	5.2%
Personal care products as a share of total manufacturing	*0.9%*	*1.1%*	

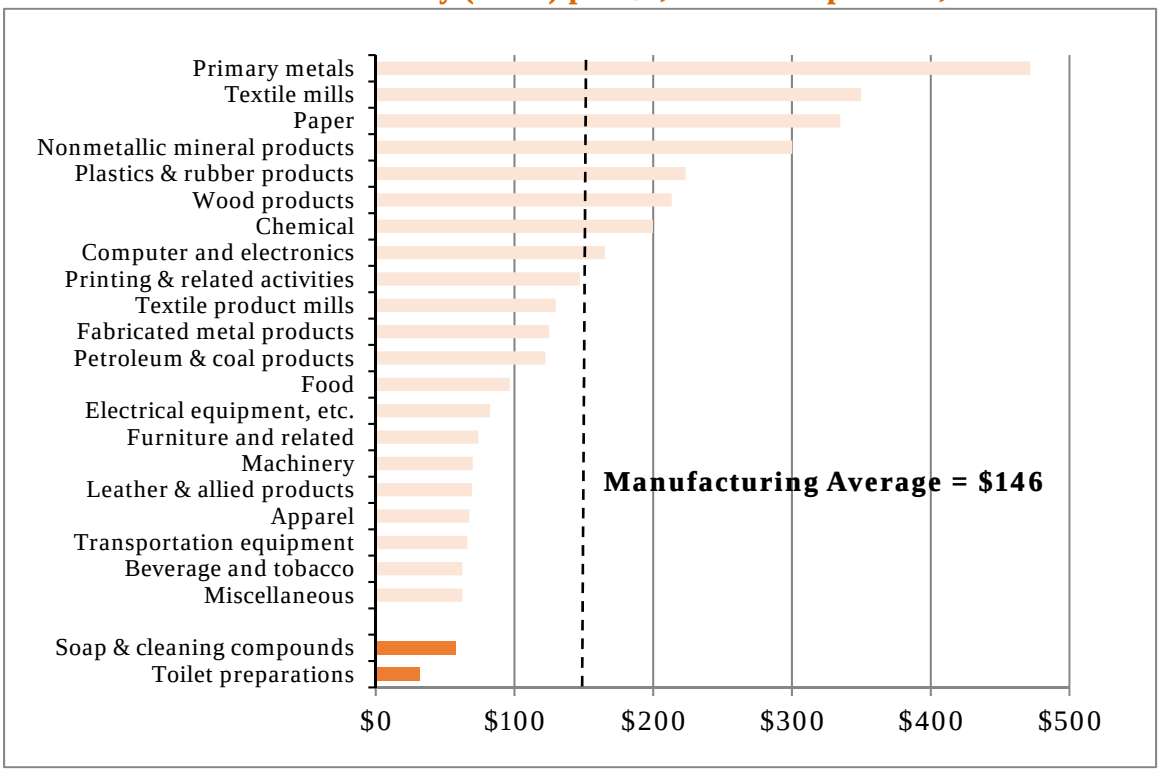
Source: National Science Foundation, Business Research and Development and Innovation Survey, various years, and PwC calculations. Personal care products manufacturing includes all of NAICS 3256 (Soap, Cleaning Compound, and Toilet Preparation Manufacturing).

G. Environmental Impact

Global warming. In response to the CDP (formerly the Carbon Disclosure Project) annual climate change questionnaire, several of the largest manufacturers in the personal care products industry reported their greenhouse gas emissions in 2018. In aggregate, these companies reduced their global greenhouse gas emissions 3.9 percent from 2017 to 2018 despite increasing sales by 5.0 percent.[12]

Energy efficiency. Compared to other manufacturers, personal care product manufacturers are less energy intensive. Each $1,000 of shipments of toilet preparation products consumed 32 kilowatt hours (kWh) of purchased electricity and each $1,000 of soap and cleaning compound products consumed 57 kWh. For manufacturing overall, electricity consumption per $1,000 of shipments averaged 146 kWh, and by industry ranged from 63 to 472 kWh per $1,000 of shipments (see **Figure 8**).

Figure 8. Manufacturing Energy Intensity: Purchased Electricity (kWh) per $1,000 in Shipments, 2016



Source: US Census Bureau, *2016 Annual Survey of Manufacturers*.

[12] Based on disclosures for the following major manufacturers: Avon, Colgate-Palmolive, Estee Lauder, GlaxoSmithKline, Johnson & Johnson, L Brands, L'Oreal, Procter & Gamble, Shiseido, and Unilever. The 3.9 percent reduction reported here refers to direct emissions from sources owned or controlled by the reporting organizations. Including indirect emissions resulting from consumption of purchased electricity and other fuels, these companies reduced emissions by 4.9 percent from 2017 to 2018. For more information on CDP see https://www.cdp.net/en. Sales growth is based on data from the companies' public financial statements.

Appendix A: Detailed State-Level Results

Table A-1. Employment Contribution of the Personal Care Products Industry, by State, 2018

State	Direct Employment	Indirect Employment	Induced Employment	Total Employment Contribution	Total as a % of State Total Employment
Alabama	29,740	6,020	8,390	44,150	1.6%
Alaska	2,360	540	1,170	4,080	0.9%
Arizona	36,420	8,440	16,790	61,660	1.6%
Arkansas	22,670	6,460	7,900	37,030	2.2%
California	283,680	70,960	114,540	469,180	1.9%
Colorado	34,080	8,460	16,640	59,170	1.5%
Connecticut	29,890	6,210	13,800	49,900	2.1%
Delaware	5,640	1,100	2,030	8,770	1.5%
District of Columbia	4,270	870	1,680	6,820	0.7%
Florida	154,600	36,320	63,740	254,650	2.0%
Georgia	88,460	18,330	26,500	133,290	2.1%
Hawaii	6,530	1,410	2,840	10,770	1.2%
Idaho	13,980	3,860	5,010	22,850	2.2%
Illinois	109,710	26,950	44,730	181,390	2.3%
Indiana	46,790	11,050	18,220	76,060	1.9%
Iowa	27,510	6,870	10,790	45,170	2.2%
Kansas	13,850	3,430	5,900	23,180	1.2%
Kentucky	23,560	6,170	9,520	39,250	1.5%
Louisiana	33,870	6,430	9,570	49,880	1.8%
Maine	5,950	1,500	2,850	10,300	1.2%
Maryland	45,980	8,930	15,590	70,500	1.9%
Massachusetts	39,210	7,410	18,010	64,620	1.3%
Michigan	65,440	13,830	23,740	103,010	1.8%
Minnesota	39,780	11,260	20,990	72,030	1.9%
Mississippi	20,860	4,090	5,670	30,630	1.9%
Missouri	44,410	11,570	19,430	75,410	2.0%
Montana	4,910	1,090	2,250	8,250	1.2%
Nebraska	11,390	2,650	4,710	18,750	1.4%
Nevada	17,130	3,500	6,650	27,280	1.5%
New Hampshire	8,490	1,960	3,920	14,370	1.6%
New Jersey	113,540	30,320	47,160	191,020	3.4%
New Mexico	8,270	1,810	3,180	13,260	1.2%
New York	155,770	32,810	56,130	244,710	1.9%
North Carolina	102,100	26,510	39,090	167,700	2.8%
North Dakota	3,840	910	1,750	6,500	1.1%
Ohio	116,880	34,360	48,670	199,910	2.8%
Oklahoma	17,320	4,050	6,380	27,750	1.2%
Oregon	20,910	5,400	10,080	36,390	1.4%
Pennsylvania	102,990	27,990	46,610	177,580	2.3%
Rhode Island	5,860	1,230	2,560	9,650	1.5%
South Carolina	27,530	5,850	9,710	43,090	1.5%
South Dakota	4,570	1,080	2,620	8,260	1.4%
Tennessee	61,750	15,590	22,900	100,250	2.4%
Texas	190,300	55,880	118,720	364,900	2.1%
Utah	18,360	4,800	7,150	30,300	1.5%
Vermont	5,100	1,420	2,200	8,730	2.0%
Virginia	52,070	11,260	19,550	82,880	1.6%
Washington	38,910	8,380	16,730	64,020	1.4%
West Virginia	6,870	1,860	2,590	11,330	1.3%
Wisconsin	28,570	7,230	13,450	49,260	1.3%
Wyoming	2,530	600	890	4,020	1.0%
U.S. Total	**2,355,200**	**577,010**	**981,690**	**3,913,900**	**1.9%**

Source: PwC calculations using IMPLAN modeling system (2017 database).

Numbers may not add to total due to rounding.

Table A-2. Labor Income Contribution of the Personal Care Products Industry, by State, 2018 ($ millions)

State	Direct Labor Income	Indirect Labor Income	Induced Labor Income	Total Contribution	Total as a % of State Total Labor Income
Alabama	708	273	372	1,353	1.0%
Alaska	110	34	66	210	0.7%
Arizona	1,224	459	820	2,502	1.2%
Arkansas	740	359	334	1,433	1.8%
California	10,311	5,360	7,139	22,810	1.3%
Colorado	1,291	560	869	2,719	1.1%
Connecticut	1,324	492	878	2,694	1.5%
Delaware	179	70	113	362	1.0%
District of Columbia	189	99	159	448	0.4%
Florida	4,589	1,885	2,909	9,383	1.5%
Georgia	2,008	985	1,306	4,298	1.2%
Hawaii	246	74	143	463	0.8%
Idaho	439	187	215	841	1.7%
Illinois	3,697	1,872	2,534	8,103	1.5%
Indiana	1,521	619	920	3,060	1.4%
Iowa	1,332	382	482	2,196	2.0%
Kansas	469	184	285	938	0.9%
Kentucky	800	317	428	1,545	1.2%
Louisiana	814	324	432	1,569	1.1%
Maine	208	72	126	406	1.0%
Maryland	1,578	588	880	3,046	1.2%
Massachusetts	1,548	517	1,174	3,239	0.9%
Michigan	1,841	778	1,191	3,810	1.2%
Minnesota	1,642	805	1,138	3,585	1.5%
Mississippi	454	166	219	839	1.2%
Missouri	1,531	665	895	3,091	1.5%
Montana	166	49	92	306	1.0%
Nebraska	387	156	240	784	1.0%
Nevada	519	175	313	1,007	1.0%
New Hampshire	341	121	211	673	1.2%
New Jersey	4,749	2,506	2,836	10,091	2.5%
New Mexico	260	79	130	470	0.9%
New York	5,592	2,740	3,819	12,151	1.2%
North Carolina	3,448	1,536	1,842	6,825	2.0%
North Dakota	145	54	90	289	0.9%
Ohio	4,204	2,164	2,320	8,687	2.1%
Oklahoma	460	219	304	982	0.8%
Oregon	800	334	505	1,639	1.1%
Pennsylvania	3,742	2,134	2,548	8,424	1.7%
Rhode Island	216	70	134	420	1.1%
South Carolina	770	283	422	1,474	1.0%
South Dakota	230	59	122	411	1.3%
Tennessee	2,148	901	1,227	4,277	1.8%
Texas	6,036	3,617	6,247	15,900	1.5%
Utah	495	239	325	1,059	1.0%
Vermont	205	75	96	377	1.7%
Virginia	1,711	714	995	3,421	1.0%
Washington	1,690	563	981	3,234	1.0%
West Virginia	227	102	112	441	1.0%
Wisconsin	976	403	659	2,038	1.0%
Wyoming	77	34	41	152	0.7%
U.S. Total	**80,385**	**37,452**	**52,640**	**170,477**	**1.4%**

Source: PwC calculations using IMPLAN modeling system (2017 database).

Numbers may not add to total due to rounding.

Labor income includes wages and salaries and benefits as well as proprietors' income.

Table A-3. Contribution to GDP of the Personal Care Products Industry, by State, 2018 ($ millions)

State	Direct GDP	Indirect GDP	Induced GDP	Total Contribution	Total as a % of State GDP
Alabama	859	504	664	2,026	0.9%
Alaska	99	84	134	318	0.6%
Arizona	1,335	769	1,438	3,542	1.0%
Arkansas	1,179	604	594	2,378	1.9%
California	15,227	8,475	12,652	36,355	1.2%
Colorado	1,427	884	1,510	3,821	1.0%
Connecticut	1,856	773	1,461	4,091	1.5%
Delaware	204	140	226	570	0.8%
District of Columbia	170	137	231	538	0.4%
Florida	5,821	3,164	5,204	14,189	1.4%
Georgia	2,606	1,719	2,373	6,698	1.1%
Hawaii	263	129	268	660	0.7%
Idaho	559	311	361	1,232	1.6%
Illinois	5,445	3,057	4,465	12,967	1.5%
Indiana	2,228	1,041	1,618	4,887	1.3%
Iowa	1,678	663	891	3,232	1.7%
Kansas	598	311	488	1,397	0.8%
Kentucky	1,002	537	748	2,287	1.1%
Louisiana	1,367	698	831	2,896	1.1%
Maine	213	123	216	552	0.9%
Maryland	2,043	962	1,567	4,571	1.1%
Massachusetts	1,413	824	1,888	4,125	0.7%
Michigan	2,681	1,277	2,031	5,988	1.1%
Minnesota	2,083	1,247	1,899	5,229	1.4%
Mississippi	658	311	410	1,379	1.2%
Missouri	2,355	1,087	1,533	4,975	1.6%
Montana	165	90	157	412	0.8%
Nebraska	442	269	425	1,136	0.9%
Nevada	603	301	579	1,484	0.9%
New Hampshire	336	194	349	879	1.0%
New Jersey	7,449	3,770	4,769	15,988	2.6%
New Mexico	307	171	256	735	0.7%
New York	8,631	4,386	6,574	19,591	1.2%
North Carolina	5,712	2,537	3,378	11,627	2.1%
North Dakota	162	99	160	421	0.8%
Ohio	8,965	3,564	4,139	16,668	2.5%
Oklahoma	513	403	547	1,464	0.7%
Oregon	826	591	881	2,298	1.0%
Pennsylvania	5,158	3,343	4,255	12,756	1.6%
Rhode Island	226	117	233	576	1.0%
South Carolina	893	504	747	2,145	0.9%
South Dakota	256	99	210	565	1.1%
Tennessee	3,074	1,479	1,997	6,549	1.8%
Texas	8,254	6,379	10,852	25,485	1.4%
Utah	692	420	594	1,706	1.0%
Vermont	249	125	165	538	1.6%
Virginia	1,904	1,155	1,822	4,882	0.9%
Washington	1,792	943	1,762	4,497	0.8%
West Virginia	447	199	212	859	1.1%
Wisconsin	978	681	1,146	2,805	0.8%
Wyoming	133	80	88	300	0.8%
U.S. Total	**113,538**	**61,730**	**91,995**	**267,263**	**1.3%**

Source: PwC calculations using IMPLAN modeling system (2017 database).
Numbers may not add to total due to rounding.

Table A-4. Tax Contribution of the Personal Care Products Industry, by State, 2018 ($ millions)

State	Direct Tax Contribution	Indirect Tax Contribution	Induced Tax Contribution	Total Tax Contribution
Alabama	206	98	143	447
Alaska	20	17	27	64
Arizona	330	158	319	807
Arkansas	332	128	136	596
California	4,829	1,938	2,932	9,698
Colorado	414	186	338	937
Connecticut	493	177	351	1,022
Delaware	48	28	45	121
District of Columbia	66	34	56	156
Florida	1,544	677	1,169	3,390
Georgia	553	336	492	1,380
Hawaii	75	28	65	168
Idaho	168	67	80	315
Illinois	1,417	656	1,005	3,078
Indiana	506	202	329	1,036
Iowa	430	134	185	749
Kansas	127	57	102	286
Kentucky	229	112	173	514
Louisiana	231	121	171	523
Maine	58	27	51	137
Maryland	645	215	361	1,220
Massachusetts	436	180	424	1,040
Michigan	671	269	454	1,393
Minnesota	617	279	451	1,347
Mississippi	149	66	93	309
Missouri	485	217	324	1,025
Montana	34	18	34	85
Nebraska	100	45	80	224
Nevada	130	63	136	329
New Hampshire	86	42	77	205
New Jersey	2,314	919	1,176	4,410
New Mexico	108	34	53	195
New York	3,108	1,091	1,695	5,895
North Carolina	1,271	550	734	2,555
North Dakota	40	22	36	97
Ohio	2,040	731	887	3,657
Oklahoma	88	73	109	270
Oregon	210	122	191	523
Pennsylvania	1,416	728	953	3,097
Rhode Island	57	28	56	141
South Carolina	187	105	172	464
South Dakota	61	19	42	123
Tennessee	795	308	438	1,541
Texas	1,905	1,216	2,241	5,362
Utah	164	84	124	373
Vermont	70	29	40	139
Virginia	577	247	412	1,236
Washington	623	214	427	1,264
West Virginia	81	40	47	168
Wisconsin	271	141	253	664
Wyoming	28	16	20	64
U.S. Total	**30,846**	**13,291**	**20,704**	**64,841**

Source: PwC calculations using the IMPLAN modeling system (2017 database).
Numbers may not add to total due to rounding.

Appendix B: Data Sources and Methodology

This appendix describes the data sources and methodology used to derive the results for the study. It first discusses the data sources PwC utilized to develop estimates of the US retail industry's direct economic impacts. It then describes the development of the indirect and induced economic impact estimates.

I. Data Sources

PwC developed its estimates of the US personal care products industry's economic impacts using data from a number of government and private sources:

- *Regional Economic Accounts* – This data source, produced by the US Bureau of Economic Analysis ("BEA"), provides information on employment and compensation by industry at the state and local levels, as well as state-level GDP by industry. BEA produces this information by compiling information collected by other organizations, both governmental and private. Industry classifications are based on 2012 NAICS codes. Employment in the *Regional Economic Accounts* includes both full-time and part-time employment. Unlike QCEW (discussed below), employment figures in the *Regional Economic Accounts* database include self-employed individuals. Data from this source pertain to employment, labor income, and GDP for 2018.

- *Quarterly Census of Employment and Wages ("QCEW")* – This data source, produced by the US Bureau of Labor Statistics ("BLS"), provides comprehensive information on employment and wages at the national, state, and local levels for workers covered by state unemployment insurance programs. In addition to data on employment and wages, QCEW also reports counts of establishments with paid employees by detailed industry sector. Industry classifications are based on the 2012 North American Industry Classification System ("NAICS"). Data from this source pertain to 2018 employment and wages.

- *Nonemployer Statistics* – Released annually by the US Census Bureau, *Nonemployer Statistics* contains data on the number of establishments that have no paid employees and annual business receipts of $1,000 or more. Nonemployers are typically self-employed individuals or partnerships operating unincorporated businesses. Data are reported at the national, state, and county levels and by detailed industry, based on 2012 NAICS codes. Data from this source pertain to nonemployer operations in 2017.

II. Estimates of Direct Economic Impacts

PwC has estimated the US personal care products industry's direct economic impacts in terms of employment and labor income (including wages and salaries and benefits as well as proprietors' income) in the manufacturing and services segments using the data sources described above and the IMPLAN modeling system. As discussed below, estimates of GDP and total taxes paid by the industry, as well as estimates of the direct impacts of the distribution segment were developed using the IMPLAN modeling system.

Employment, Labor Income and GDP

This study uses data on employment, employee compensation, and proprietors' income, by industry from the BEA's *Regional Economic Accounts* and data on employment and

wages and salaries from the BLS' *Quarterly Census of Employment and Wages* to develop our estimates of the direct economic impact of the US personal care products industry.

PwC's employment estimates include both full-time and part-time workers as well as self-employed individuals and business owners. The *State Annual Personal Income and Employment* data set published as part of the BEA's *Regional Economic Accounts* is the only source on total employment including self-employed individuals by industry.

Because the published BEA data is not available at the detailed (6-digit NAICS) industry level, PwC obtained data on paid employment and employee compensation in the manufacturing and services segments from the BLS. In a limited number of cases, the count of paid employees was suppressed because of the small number of establishments in an industry in a state. Relying on employment counts available for the sector at the national-level and for higher-level industries at the state-level, a two-stage "raking" process was used to estimate the state-level employee count. The raking process uses information from known sectors within a state and across states to impute information for the sectors with suppressed data.[13]

PwC then estimated total self-employment in 2018 for the more aggregated industry using the BEA data and allocated across the subsectors using data from *Nonemployer Statistics*. For example, self-employment was estimated for NAICS 812 (Personal Care and Laundry Services) and was then allocated across six sub-industries including NAICS 81211 (Hair, Nail, and Skin Care Services) and NAICS 812199 (Other Personal Care Services) using each sub-industries' share of nonemployer establishments in 2017.

Direct employment was separately estimated for the US as a whole and for each of the 50 states and the District of Columbia. The state-level estimates were then scaled to match the national level estimates. As discussed in **Section II**, above, certain sub-industries in the personal care products industry have multiple business lines, some of which fall outside of the personal care products industry. In such cases we allocated employment between the personal care products line and other business lines based on the ratio of personal care product sales to total industry sales (see **Table 1**).

A similar methodology was used to estimate labor income at the national and state levels. In particular, employee compensation was obtained from the *Quarterly Census of Employment and Wages* and scaled to match BEA totals from employee compensation at the more aggregated industry level.[14] Proprietors' income was then estimated at the more aggregated industry level using the BEA data and allocated to the detailed sectors using data on receipts from *Nonemployer Statistics*.

Similarly, in order to estimate direct GDP by industry, BEA estimates of GDP are the more aggregated industry level were allocated to the detailed (6-digit NAICS) industry level based on PwC's estimates of direct labor income and information from the IMPLAN modeling system.

[13] Oh, H.L. and Scheuren, F. (1987). Modified Raking Ratio Estimation. Survey Methodology, vol. 13, no. 2, pp. 209-219.
[14] Scaling is necessary due to conceptual and measurement differences between BEA's and BLS's definitions of employee compensation.

I-O models capture the upstream relationships, but downstream impacts on the distribution channel are not reflected in standard economic multipliers. The transportation, wholesaling, and retailing of personal care products to the final consumer could be attributable to the personal care products industry. To capture the economic activity associated with the transportation, wholesaling, and retailing of personal care products, we have relied on sector-specific transportation, wholesale, and retail margins in the IMPLAN model. Based on these margins, we have estimated the direct downstream economic impact associated with this activity at the national and state levels.

Tax Impacts

Direct taxes paid were estimated at the national and state-levels using PwC's estimates of direct employment, labor income, and GDP and the national and state IMPLAN models. State-level estimates were scaled to match the national level estimates.

III. Estimates of Indirect and Induced Economic Impacts

The initial round of output, income, and employment generated by the operations of the personal care products industry leads to successive rounds of re-spending in the chain of production and through the personal consumption spending of industry and supplier employees. Such indirect and induced economic impacts can be measured using various approaches. The most common is multiplier analysis. In broad terms, a multiplier is an index that indicates the overall change in the level of economic activity that results from a given initial change. It effectively adds up all the successive rounds of re-spending, based on a number of assumptions that are embedded in the method of estimation.

There are different methods available for calculating multipliers. The method used in this report is *input-output* analysis. It is the most commonly used approach in regional economic impact studies. The input-output model developed by IMPLAN is one of the best known input-output models for regional economic studies in the United States and is widely used by government, academic and private-sector researchers.[15]

The IMPLAN model is built around an “input-output” table that relates the purchases that each industry has made from other industries to the value of the output of each industry. To meet the demand for goods and services from an industry, purchases are made in other industries according to the patterns recorded in the input-output table. These purchases in turn spark still more purchases by the industry's suppliers, and so on. Additionally, employees and business owners make personal purchases out of the additional income that is generated by this process, sending more new demands rippling through the economy. Multipliers describe these iterations. The Type I multiplier measures the direct and indirect effects of a change in economic activity. It captures the inter-industry effects only, i.e., industries buying from local industries. The Type II (Social Accounting Matrix or SAM) multiplier captures the direct and indirect effects and, in addition, it also reflects induced effects (*i.e.*, changes in spending from households as income increases or decreases due to the changes in production). The indirect and induced impacts by the personal care products industry on other sectors of the economy in terms of employment, labor income (including wages and salaries and

[15] More information on IMPLAN is available at www.implan.com.

benefits as well as proprietors' income), contribution to GDP, and taxes paid were calculated through the multiplier process built in each model.[16]

For this study, PwC built customized IMPLAN input-output models for the national economy and the economies of each state and the District of Columbia to calculate the industry's *indirect* and *induced* economic impact in each study area in terms of employment, labor income, GDP, and taxes paid.

Because IMPLAN regional models capture only the indirect and induced effects within a region, the indirect and induced effects crossing state borders ("cross-state spillover effects") are not captured by the IMPLAN state models. PwC quantified the cross-state "spillover effects" and allocated them proportionally to each state. The state indirect and induced effects reported throughout this study include such allocation of the cross-state spillover effects.

[16] Because the IMPLAN models are used for total impact analysis (as opposed to marginal impact analysis) in this study, necessary adjustments are made to the initial indirect and induced impact estimates to prevent double-counting. For instance, any indirect or induced effects from the initial estimates for IMPLAN sectors that are fully mapped to the personal care products industry are removed.