Capping a remarkable, decades-long streak of vigorous growth, bottled water passed a major milestone in 2016 when it surpassed carbonated soft drinks to become the largest beverage category by volume in the United States. Total bottled water volume grew from 11.8 billion gallons in 2015 to 12.8 billion gallons in 2016, an increase of nearly 9 percent. This marked the third year in a row of accelerating growth.

Bottled water effectively reshaped the multiple beverage marketplace. When Perrier first entered the United States in the 1970s, few industry observers would have predicted the heights to which bottled water would eventually climb. Where once it would have been unimaginable to see Americans walking down the street carrying plastic bottles of water, or driving around with them in their cars’ cup holders, now that’s the norm.
With the exception of two relatively small declines in 2008 and 2009—when most beverage categories contracted—bottled water volume grew every year from 1977 to 2016. This period included 17 double-digit annual volume growth spurts. Since resuming growth in 2010, bottled water volume has consistently enlarged at solid single-digit percentage rates. As a result, per capita consumption exceeded 39 gallons in 2016, while average intake of carbonated soft drinks slipped to about 38.5 gallons.

The comparison of the two largest beverage types is illustrative. Bottled water’s ascent coincided with and encouraged seismic shifts in consumer preferences for refreshment and rehydration. As the ultimate portable and affordable beverage, bottled water spawned new usage occasions and habits. Suitable for consumption at any and all times of day, and not necessarily in need of being kept ice cold, bottled water simply became the preferred beverage not only for consumers aiming to cut back on calories or artificial sweeteners but also for consumers of all kinds.

Total bottled water volume grew from 11.8 billion gallons in 2015 to 12.8 billion gallons in 2016, an increase of nearly 9 percent.

Single-serving sizes of plastic bottles became the most popular option, driving overall growth of the category and accounting for the majority of its volume. Yet all other segments—including larger, multi-serving bottles as well as home and office delivery (HOD), sparkling water, and imports—also registered growth in 2016. In fact, both domestic sparkling and imports advanced at double-digit rates, albeit from comparatively small bases.

Remarkable Volume Growth and Increasing Revenues
Prior the economic challenges at the end of the century’s first decade, bottled water experienced a remarkable streak...
Changes in per capita consumption of bottled water indicate real and increasing enthusiasm for a product that consumers regard as a healthful alternative to other beverages.

of fast volume growth, as chronicled in *U.S. Bottled Water through 2021*, Beverage Marketing Corporation’s latest annual analysis of the market. During the 2000s, bottled water volume charted double-digit percentage growth rates in two years and advanced at rates close to that level in several others. Bottled water volume grew by close to 12 percent in 2002, and, after growing by 10.8 percent in 2005, it enlarged by 9.5 percent in 2006. Like many other beverage types during the economic recession, bottled water departed from the growth pattern of preceding years, when its volume declined by 1.0 percent in 2008 and 2.5 percent in 2009.

Unlike carbonated soft drinks, which followed several years of slow growth with multiple volume reductions, bottled water demonstrated that its two consecutive declines were aberrations rather than the start of a lengthy losing streak. When bottled water volume began to grow again in 2010, it essentially restored volume to where it had been prior to the declines. Even stronger growth followed in each of the next half dozen years. By 2016, volume reached a new volume record—more than 4 billion gallons higher than it had been in 2007. Soft drinks, on the other hand, underwent their twelfth consecutive year of volume reduction in 2016.

Bottled water producers’ revenues also declined in both 2008 and 2009 as well, and did so more dramatically than volume, but then also revived. Bottled water wholesale dollar sales first exceeded $6 billion in 2000. By 2007, they neared $11.7 billion. Category sales declined by more than 3 percent to $11.3 billion the following year and then by more than 5 percent to $10.7 billion in 2009. They inched upward in 2010 and climbed back above $11 billion in 2011. Wholesale dollars approached $12 billion in 2012 and topped $12.5 billion in 2013. They exceeded $13.3 billion in 2014, reached $14.5 billion in 2015, and almost hit $16 billion in 2016.

### Trends in Consumption
Changes in per capita consumption of bottled water indicate real and increasing enthusiasm for a product that consumers regard as a healthful alternative to other beverages. U.S. residents have upped their annual

| U.S. BOTTLED WATER MARKET Per Capita Consumption 2006 – 2016 |
|--------------------|-----------|-----------|
| **Year** | **Gallons Per Capita** | **Annual % Change** |
| 2006   | 27.6      | 8.4%      |
| 2007   | 29.0      | 5.3%      |
| 2008   | 28.5      | -1.8%     |
| 2009   | 27.6      | -3.2%     |
| 2010   | 28.3      | 2.7%      |
| 2011   | 29.2      | 3.1%      |
| 2012   | 30.9      | 5.7%      |
| 2013   | 32.1      | 4.0%      |
| 2014   | 34.2      | 6.4%      |
| 2015   | 36.6      | 7.1%      |
| 2016   | 39.3      | 7.4%      |

Source: Beverage Marketing Corporation
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consumption by nearly a dozen gallons since 2006, increasing from 27.6 gallons per person to 39.3 gallons a decade later. During the same period, per capita consumption of carbonated soft drinks dropped by 11.9 gallons. Per capita consumption of major beverage categories (e.g., milk and fruit beverages) also fell. Other types, including coffee and tea, were characterized by stability, though the ready-to-drink versions of both categories made gains. Beverages that are associated with beneficial properties and functional benefits—a group that includes packaged water as well as energy drinks, sports beverages, and ready-to-drink tea—were the most resilient elements of the beverage market after 2009. Even so, average intake of ready-to-drink tea and sports beverages remained fractions of bottled water’s per capita consumption level. Indeed, bottled water added more gallons to its per-person consumption rate in ten years than either ready-to-drink tea or sports beverages reached by the end of that period. (Ready-to-drink edged above 5 gallons per American in 2016; sports beverages approached that level.) Bottled water showed itself to

The ready availability of packaged water wherever beverages are sold crucially differentiates bottled water from tap.

be not only a vital component of the liquid refreshment beverage market but also poised for still more increases in per capita consumption in the future.

Numerous attributes contribute to bottled water’s ongoing appeal to U.S. consumers, including its associations with healthfulness, convenience, safety, and value. Multiple packaging types, ranging from bulk to single-serve, facilitate a wide range of uses. Among ready-to-drink commercial beverages, bottled water is relatively inexpensive, and aggressive pricing—especially in the retail PET segment (named for its bottles made from polyethylene terephthalate)—made it more and more affordable. Consumers’ interest in beverages that deliver benefits in addition to refreshment alone also contributes to the fundamental hydrating beverage’s rise in the beverage rankings. Bottled water’s lack of calories and artificial ingredients attracts conscientious consumers. Even where tap water may be safe, many people prefer bottled water, which they regard as superior in taste. The ready availability of packaged water wherever beverages are sold also crucially differentiates bottled water from tap.
Though it has occasionally been compared with tap water, bottled water actually achieved its position by enticing consumers away from other packaged beverages deemed less healthful than bottled water. While some consumers may have shifted away from regular, full-calorie sodas in favor of their diet versions, many others switched to bottled water instead. As some consumers became wary of artificial sweeteners, they shunned diet as well as regular soda.

**Category Developments**

Domestic non-sparkling water consistently stands as the largest segment of the U.S. packaged water business; its more than 12 billion gallons represented 94 percent of total volume in 2016. As a whole, domestic non-sparkling saw slower volume reductions than the overall market in 2008 and 2009, and then it outperformed again in 2010, 2011, and 2012. It moved very slightly slower than the total market in 2013. Domestic non-sparkling water saw significantly faster growth in 2014 than in 2013, but it lagged the bottled water market as whole, as it did once again for a fourth year in a row in 2016.

The non-sparkling category includes various components that typically perform quite differently from one another. In 2016, for the sixth consecutive year, all four segments grew, but they did so at dissimilar rates. Throughout most of the 1990s and 2000s, the retail premium segment—consisting of still water in single-serve PET bottles—drove the overall category’s development. Indeed, the PET component enlarged by a double-digit percentage rate 16 consecutive times through 2007. Growth slowed markedly in 2008 before it disappeared in 2009. Yet PET’s 0.9

Although a small segment of the bottled water market, domestic **sparkling water** grew at an explosive rate in 2016: **35.5%**.

### U.S. BOTTLED WATER MARKET

**Volume and Growth by Segment**

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-sparkling Volume*</th>
<th>Change</th>
<th>Domestic Sparkling Volume*</th>
<th>Change</th>
<th>Imports Volume*</th>
<th>Change</th>
<th>Total Volume*</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>10,414.5</td>
<td>7.0%</td>
<td>338.8</td>
<td>17.9%</td>
<td>149.3</td>
<td>11.3%</td>
<td>10,902.5</td>
<td>7.3%</td>
</tr>
<tr>
<td>2015</td>
<td>11,175.6</td>
<td>7.3%</td>
<td>423.7</td>
<td>25.1%</td>
<td>169.3</td>
<td>13.5%</td>
<td>11,768.7</td>
<td>7.9%</td>
</tr>
<tr>
<td>2016</td>
<td>12,013.6</td>
<td>7.5%</td>
<td>573.9</td>
<td>35.5%</td>
<td>194.4</td>
<td>14.8%</td>
<td>12,781.9</td>
<td>8.6%</td>
</tr>
</tbody>
</table>

*Millions of gallons

Source: Beverage Marketing Corporation

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percent reduction was far less than the 2.5 percent loss measured for bottled water in general. Besides, PET volume in 2009 of almost 5.2 billion gallons stood more than 4.1 billion gallons higher than it had in 1999, and its share of total bottled water swelled from 24 percent to more than 61 percent during that ten-year period.

In 2010, PET experienced the strongest growth of any bottled water segment, advancing by 6.8 percent to 5.5 billion gallons, which boosted its share above 63 percent. Growth slowed in 2011 but remained well in advance of the total market: volume greater than 5.8 billion gallons flowed from growth of 5.3 percent, which pushed PET’s share to 64 percent. In 2012, the segment saw its strongest showing since 2007, increasing by more than 8 percent to 6.3 billion gallons, which represented 65 percent of the overall market. Greater than 6 percent growth in 2013 propelled volume to nearly 6.7 billion gallons—essentially two-thirds of the total. In 2014, the segment advanced at an even greater rate than in 2012, catapulting volume above 7.2 billion gallons and market share to 66.4 percent. Still another year of acceleration drove PET volume to nearly 7.9 billion gallons and share to more than 67 percent. In

2016, the single-serve segment enlarged by more than 9 percent to reach 8.6 billion gallons, which gave it still more market share.

Retail bulk volume experienced some reversals, as more than a few consumers chose convenient PET multipacks in large format retail channels instead of larger (1 to 2.5 gallon) sizes. Its share slid from nearly one-quarter of the category volume at the beginning of the century to less than 9 percent by 2016, largely due to competition from PET. After several declines, the segment did grow each year from 2011 to 2016. However, retail bulk’s 3.6 percent uptick was considerably slower than the overall bottled water market, or the non-sparkling sub-set, in 2016.

Like retail bulk, HOD faced competition from convenient PET bottles. The segment, which comprised the largest of them all as recently as the mid-1990s, accounted a bit less than 11 percent of total volume by 2016. HOD volume slipped in the United States from close to 1.4 billion gallons in the early 2000s to around 1.2 billion gallons a few years later before inching back up to about 1.4 billion gallons again in 2016, when volume increased by 3.3 percent.

The comparatively small, mostly regional vending segment involving refillable jug containers realized growth even in the years when total bottled water volume declined. Its low cost during economic hard times undoubtedly had something to do with vending’s positive results. It continued to grow in 2016, albeit at a far slower rate than the domestic still water market or the bottled water market as a whole and only slightly faster than those recorded for retail bulk and HOD.

The two segments outside the domestic non-sparkling sphere grew in 2016, and, once again, both did so musculously. Imported water, the smallest segment of them all, is prone to fluctuations. In the 2000s, it registered double-digit percentage growth in some years, and equally sizeable contractions in others. After one of those up years in 2007, imported water’s volume fell sharply in 2008 and then plummeted precipitously in 2009. It continued to shrink in 2010 before inching up modestly in 2011. Volume growth started accelerating in 2012 and 2013. In 2014, imports notched their first double-digit growth rate since 2007. In 2015, they advanced at an even faster clip, and another quickening followed in 2016. Sparkling water held a small share of bottled water volume but grew at an even more explosive rate than imports, let alone retail PET, in 2016, as it did in several previous years.
Domestic non-sparkling water accounted for almost all per capita bottled water consumption in 2016, as usual. Sparkling water volume worked out to about 1.8 gallons per person, (With imports, the figure translated into about six-tenths of a gallon per U.S. resident.) In the key PET portion, average intake moved from 15.7 gallons in 2006 to nearly 26.5 gallons ten years later.

**International Developments**
Bottled water became a beverage industry phenomenon not only in the United States—which until fairly recently ranked as the No.1 market in the world in terms of volume—but also in virtually every major geographical region of the world. Bottled water initially emerged as a large, mainstream commercial beverage category in Western Europe, where consumption of it has long been part of many residents’ routines. It now stands as a truly global beverage. Several Asian markets achieved strong growth to become major bottled water markets during the 2000s. In fact, Asia itself became the largest regional market in 2011, edging out North America and easily outshining Europe. After having moved ahead of Mexico to claim the No.2 position in 2012, China surpassed the United States to take the lead in 2013. By 2016, China accounted for close to one-quarter of global bottled water volume.

Global bottled water consumption is estimated to have topped 92 billion gallons in 2016, according to data from

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**GLOBAL BOTTLED WATER MARKET**

Leading Countries’ Consumption and Compound Annual Growth Rates

2011 – 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>Countries</th>
<th>2011</th>
<th>2016</th>
<th>2011-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>12,117.6</td>
<td>22,146.9</td>
<td>12.8%</td>
</tr>
<tr>
<td>2</td>
<td>United States</td>
<td>9,107.2</td>
<td>12,781.9</td>
<td>7.0%</td>
</tr>
<tr>
<td>3</td>
<td>Mexico</td>
<td>7,227.2</td>
<td>8,514.3</td>
<td>3.3%</td>
</tr>
<tr>
<td>4</td>
<td>Indonesia</td>
<td>4,728.7</td>
<td>7,156.4</td>
<td>8.6%</td>
</tr>
<tr>
<td>5</td>
<td>Brazil</td>
<td>4,503.8</td>
<td>5,507.4</td>
<td>4.1%</td>
</tr>
<tr>
<td>6</td>
<td>India</td>
<td>3,045.1</td>
<td>5,193.9</td>
<td>11.3%</td>
</tr>
<tr>
<td>7</td>
<td>Thailand</td>
<td>3,120.8</td>
<td>3,841.4</td>
<td>4.2%</td>
</tr>
<tr>
<td>8</td>
<td>Germany</td>
<td>2,956.1</td>
<td>3,134.1</td>
<td>1.2%</td>
</tr>
<tr>
<td>9</td>
<td>Italy</td>
<td>2,831.1</td>
<td>2,909.3</td>
<td>0.5%</td>
</tr>
<tr>
<td>10</td>
<td>France</td>
<td>2,249.8</td>
<td>2,389.7</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

**Top 10 Subtotal**  | 51,887.5 | 73,575.3 | 7.2% |

**All Others**       | 15,927.2 | 18,538.0 | 3.1% |

**WORLD TOTAL**      | 67,814.6 | 92,113.3 | 6.3% |

*Compound annual growth rate
Source: Beverage Marketing Corporation
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By 2016, China accounted for close to one-quarter of global bottled water volume.

the latest edition of Beverage Marketing’s The Global Bottled Water Market. Total consumption swelled by almost 6 percent during the year. Per capita consumption of more than 12 gallons represented a gain of 2.7 gallons over the span of five years.

Of course, per capita consumption by individual region or country can diverge significantly from the global average. For instance, several Western European countries have per capita consumption levels far above 25 gallons, and the No.1 market had average intake of more than 67 gallons in 2016. Simultaneously, much of the developing world, where the majority of the world’s population resides, finds its per capita consumption figures still in the single-digit range.

Even if the global per capita consumption figure can obscure significant regional disparities, bottled water’s international growth signals demand for it in diverse markets. Consumers have shown a thirst for it in highly developed markets, in less developed ones, and in economies in transition. Bottled water tapped into some different consumer trends around the globe. In developed countries such as the United States and Canada, bottled water became a particularly dynamic major commercial beverage category by registering as an attractive option for health-conscious consumers. Marketers positioned bottled water as a virtuous alternative to carbonated soft drinks and fruit juice drinks (some of which comprise sizeable portions of their own product portfolios). In the developed world, consumers came to see bottled water as not only a way of achieving hydration but also as a functional beverage. At the same time, bottled water serves at least a partial solution to the problem of often-unsafe water found in many economically developing countries.

While much of the world’s bottled water market is still highly fragmented and controlled by local brands, consolidation has occurred. Four companies came to dominate much of the market. Swiss food and beverage giant Nestlé and France’s Danone are the traditional leaders of the bottled water pack. Both companies originally centered their operations around the core markets of Western Europe and the United States. However, as water growth is increasingly coming from the developing world, Nestlé and Danone expanded their initiatives to the competitive fields of Asia, Latin America, and other areas. Danone actually stepped back from the U.S. market to focus instead on some of these other markets. Soft drink industry leaders Coca-Cola and PepsiCo also entered the bottled water arena. After attaining solid positions in the United States, both companies increasingly devoted resources and energy to developing their global bottled water businesses.

North America boasts two of the three largest individual bottled water markets with the United States and Mexico, which together represented for 23.1 percent of the world’s packaged water market in 2016. The U.S. bottled water market had been a catalyst for much of the global expansion up until the mid-2000s, and its ongoing growth continues to contribute to the overall market’s enlargement. Its compound annual growth rate (CAGR) of 7 percent for the five-year period ending with 2016 was faster than the 6.3 percent CAGR achieved by the growth of the global market during the same period. Mexico alone accounted for 9.2 percent of the global volume with 8.5 billion gallons in 2016. With a five-year CAGR of 3.3 percent, however, it grew much more slowly than either the United States or the world market.

The United States and Mexico represented 23.1% of the world’s packaged water market in 2016.
did India, the No.3 Asian market, which ranked sixth overall. Thailand also stood as a top-ten bottled water market, but it grew more slowly than China, Indonesia, and India.

Europe may not boast any of the biggest bottled water markets, but it does have several major ones, including three in the top 10. Yet, because these are firmly established markets, their growth tends to be slower than those where bottled water has less of a tradition. Some of the most prominent continental countries experienced only very slight growth. For example, during the five-year period ending with 2016, Italy’s volume grew by a CAGR of just 0.5 percent. Germany, the eighth largest bottled water market in the world, had a CAGR of 1.2 percent, and tenth-place France moved at the same pace. As a group, the trio of leading European bottled water markets accounted for 9.2 percent of the world’s total volume in 2016—the same share Mexico held by itself.

Still water accounts for the majority of bottled water sales in much of the world. Sparkling water sales are strong in several countries, such as Argentina, Chile, Uruguay, the Netherlands, and Germany, where sparkling water is often served with meals. On a global level, sparkling water accounts for an estimated 10 percent of the total volume, with still water accounting for the remaining 90 percent.

Plastic packaging is preferred over glass in almost every country. Even in Germany and other countries, such as the United Kingdom, where glass has a strong presence, PET is the most dynamic and rapidly growing segment. At about one-third of global volume, HOD, or bulk water, still accounts for a minority of global bottled water sales. Yet it is a vital segment in many countries, such as Mexico, where it accounts for more than two-thirds of the volume.

Mexico regularly leads the world in bottled water per capita consumption, and that remained the case even after China surpassed it in absolute volume. Average intake in Mexico jumped from 60.5 gallons in 2011 to 67.2 gallons five years later. Per capita consumption in China stood more than four times lower, at 15.7 gallons, in 2016. The
Bottled water looks likely to continue building on its already monumental history of enlargement—and put more distance between itself and carbonated soft drinks.

not-long-ago leader in average intake, Italy, consumed the equivalent of 47.5 gallons per person in 2016, which put it in third place behind Thailand, which in 2011 consumed the equivalent of 46.9 gallons per person but had upped average intake to 56.9 gallons by 2016.

Several Middle Eastern markets rank very highly in per capita bottled water consumption. With the equivalent of more than 31 gallons for each resident in 2016, Saudi Arabia had the eighth highest level of bottled water consumption in the world. In addition to Saudi Arabia, the Middle East region had the United Arab Emirates and Lebanon in the top 20 in per capita bottled water consumption. At slightly more than 20 gallons per resident, Kuwait also consumes bottled water at a rate greater than the global average, though it didn’t make it onto the 2016 top-20 list.

Although Europe no longer held the top spot in volume per capita, nine of the top 20 bottled water consumers on a per person basis were European countries as of 2016. The consumers of the combined market of Belgium-Luxembourg imbibed more than 35 gallons each, a rate that tended to move upward over the years. Germany, France, Spain, and Italy were the other European countries with per capita consumption greater than 30 gallons, while Hungary came close to that level. French consumers quaffed 1.2 gallons more bottled water in 2016 than they had five years earlier. In 2016, Germany and Spain had per capita consumption rates of 38 gallons and 31 gallons, respectively, putting them in fifth and ninth place in terms of average bottled water intake. Like France, Germany consumed more bottled water per person in 2016 than it had five years before. Hungary, which ranked eleventh, also increased its bottled water consumption, though only slightly. Other European markets among the top 20 were Austria, Switzerland, and Poland.

While Asian nations attained prominence among the world’s bottled water markets when measured in total volume, the most populous countries generally do not have high per-person intake levels. The Chinese special administration region of Hong Kong made the list for the first time as its average intake approached 22 gallons in 2009 and continued to increase per capita consumption subsequently, climbing to 28.8 gallons in 2016. Despite its status as the largest market, mainland China did not rank among the top 20 markets in per capita consumption in 2016, although intake had climbed above the global norm by that point.

Americans’ 2016 per capita bottled water consumption put the United States in the No.4 position among the countries of the world, right behind Italy but ahead of Germany.

Looking Ahead
Beverage Marketing expects bottled water to continue reconfiguring the U.S. multiple beverage marketplace, gaining market share all the while. The total amount of liquid Americans annually imbibe will remain stable, resulting in overall volume growth in line with population increases. Bottled water is likely to grow much faster, unlike carbonated soft drinks or fruit beverages, which will continue to cede territory. Most other major beverage categories, including coffee and tea, are likely to grow much more slowly than bottled water.

Bottled water looks likely to continue building on its already monumental history of enlargement, and put still more distance between itself and the erstwhile No.1 beverage category, carbonated soft drinks, which it exceeded in size in 2016. Around the turn of the century, per capita soft drink consumption regularly exceeded 50 gallons, and bottled water could reach that level in the near future.

John G. Rodwan, Jr., is editorial director at Beverage Marketing Corporation, a New York-based research, consulting, and financial services firm dedicated to the global beverage industry. Beverage Marketing publishes numerous market reports on bottled water and other beverages.
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