



Published in final edited form as:

Obes Rev. 2012 March ; 13(3): 258–274. doi:10.1111/j.1467-789X.2011.00949.x.

Drinking to our health: Can beverage companies cut calories while maintaining profits?

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Abstract

Carbonated soft drinks (CSD) and other beverages make up an increasing percentage of energy intake, and there are rising public health concerns about the links between consumption of sugar-sweetened beverages and weight gain, obesity, and other cardio-metabolic problems. In response, the food and beverage industry claims to be reformulating products, reducing package or portion sizes, and introducing healthier options. Comparative analysis on various changes and their potential effects on public health are needed.

We conduct a case study using the two largest and most influential producers of sweetened beverages, The Coca-Cola Company and PepsiCo, who together control 34 percent of the global soft drink market, examining their product portfolios globally and in three critical markets (the US, Brazil, and China) from 2000–2010. On a global basis, total revenues and energy per capita sold increased, yet the average energy density (kilojoules per 100 milliliters) sold declined slightly, suggesting a shift to lower-calorie products. In the US, both total energy per capita and average energy density of beverages sold decreased, while the opposite was true in the developing markets of Brazil and China, with total per capita energy increasing greatly in China and, to a lesser extent, in Brazil.

Keywords

Global beverage companies; calories; obesity; United States; China; Brazil; World

I. Introduction

Sugar-sweetened beverages (SSB) and many other types of caloric beverages have been linked with increases in weight and other cardio metabolic problems¹⁻⁴. Studies have shown that beverages are less satisfying to the body's appetitive sensations than solid foods, with calories from SSB poorly compensated by reduction in other dietary components. Adding a beverage to a meal increases the total energy intake from the meal, roughly in line with the caloric content of the beverage, but at the expense of critical nutrients⁵⁻⁹. This has led to many scholars and organizations placing reduced consumption of SSB as important for the promotion of healthy eating and prevention of excess weight gain, obesity, cancer, diabetes, and heart disease^{1, 2, 4, 10-12}. Studies across the globe have shown marked increases in SSB consumption^{3, 13-15}. At the same time, the beverage industry is claiming to reduce marketing of, and calories from, their products¹⁶.

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Conflicts of interest: None of the authors have conflicts of interest of any type with respect to this manuscript.

One of the critical issues ignored in the global literature is the evolving mix and pattern of caloric beverages sold as the food and beverage industry responds to various health and consumer concerns. With SSB continuing to attract negative publicity due to their connection with these concerns, consumers are increasingly replacing them with alternatives¹⁷. Although major beverage companies continue to rely on their flagship brands, such as Coke, Pepsi, and their diet equivalents, to drive sales of carbonated soft drinks (CSD), they have responded to public health concerns, sluggish sales growth, and consumer preferences by expanding their beverage portfolios and shifting production to new, healthier options, including lower-calorie CSD and non-carbonated beverages, such as bottled water, juices, and ready-to-drink (RTD) teas¹⁸. This is no doubt fueled in part by the fact that the volume share of CSD declined from 70 percent to less than 50 percent of the US non-alcoholic liquid refreshment market between 1988 and 2008, led by declines in full-calorie CSD¹⁹. The US CSD business has not experienced year-on-year volume growth since 2004, and “diet” brands are now estimated to make up more than 30 percent of the US CSD market²⁰. Comparing dietary data from the US National Health and Nutrition Examination Survey (NHANES) 1999-2002 and 2003-2006, the average intake of full-calorie CSD decreased among most age and gender groups while, for many groups, average intake of diet CSD, as well as regular and low-calorie fruit drinks and fruit “ades” increased¹⁹.

Major beverage industry companies, through affiliations such as the Healthy Weight Commitment Foundation (HWCF), have voluntarily pledged to reduce calories in the US marketplace through a combination of product innovation, smaller portion sizes, and marketing of low-calorie options²¹. In addition, the International Food and Beverage Alliance has brought together global companies to support the World Health Organization's Strategy on Diet, Physical Activity, and Health through research, product innovation, and expanding access to nutritional information^{16, 22}. Whether these ongoing voluntary efforts will have any impact is yet to be proven, and the track record for earlier voluntary attempts in the US for tobacco control, seat belt provision, and changes to food and beverage marketing has been mixed²³⁻²⁹. These are, by and large, new voluntary initiatives, and it will take years before we know whether there has been any impact, positive or negative. In addition, the majority of these pledges are limited to developed countries to date; whether such efforts will be expanded to the developing world remains to be seen.

Given these efforts, we set out to conduct a case study using the two largest global beverage companies, namely The Coca-Cola Company (TCCC) and PepsiCo Inc. (PepsiCo), who controlled a combined 69 percent of the global CSD market, as well as a 34 percent market share for soft drinks overall in 2010⁷. For the purposes of this paper, we rely on the definition of “soft drink” put forth by Euromonitor, which includes the aggregation of (i) carbonates/CSD; (ii) fruit/vegetable juice; (iii) bottled water; (iv) functional drinks; (v) concentrates; (vi) RTD tea; (vii) RTD coffee; and (viii) Asian specialty drinks. Thus, although the term “soft drink” may refer specifically to CSD in everyday use, the 34 percent market share takes into account other beverage categories, with CSD considered a subset of soft drinks overall.

Specifically, we seek to answer: What have TCCC and PepsiCo, the largest and most influential beverage companies, accomplished? Has the energy sold per capita decreased over the last ten years? If so, was this trend limited to the US, or could it be seen in Brazil, China, and the rest of the world? What sorts of substitutions or offsetting in the product portfolios within each company and across countries might be occurring? In sum, have these companies shifted the energy content of their global product portfolio, and what might this imply for public health?

II. Data and Methods

Sales Data

We collected sales data from 2000 to 2010 for all soft drink brands under parent companies TCCC and PepsiCo from Euromonitor International's Passport Global Market Information Database (GMID)⁷. For volume sales, we used the number of eight-ounce servings sold per year by each company in each of our target geographic areas (the US, Brazil, China, and globally), broken down by brand, with each brand allocated to one or more Euromonitor soft drink categories (see Appendix I for beverage category definitions). For the US, Brazil, and China, the total number of eight-ounce servings, including both on-trade and off-trade sales was available, while for the global total, only off-trade data were available. On-trade sales refer to those from food service (e.g., in restaurants and hotels), while off-trade sales refer to those in retail locations, including supermarkets and convenience stores. For value sales, we used the off-trade value of retail sales per year by each company in each geographic area, segregated by soft drink category, and adjusted for inflation using the Organisation for Economic Co-operation and Development's Consumer Price Index (CPI) indicator^{7, 30}. On-trade value sales were unavailable.

Data on Caloric Content

2010 Gladson Nutrition Database (US)—This commercial database contains Universal Product Code (UPC) level data of branded and private label items from manufacturers, distributors, and retailers in the US, including the nutrition facts panel, ingredient list, warnings, claims, and manufacturer. Field data collectors also identify new or changed products. The database contains more than 170,000 UPCs and is updated with approximately 2,000 new or changed UPCs per week^{31, 32}.

2005-2009 Nielsen US Homescan—This commercial database contains household-level data on consumer shopping and purchase behavior (including food and beverages) at the UPC level from a nationally representative household sample that scans UPCs or saves labels and receipts. The static US panel contains approximately 60,000 households obtained through both targeted (based on demographic needs) and online recruitment^{32, 33}.

Datamonitor Product Launch Analytics (Global)—This database includes new products (at the UPC level) entering the global marketplace, including foods and beverages, and is updated continuously. A list of ingredients and nutrition facts panel are included when available, though nutrition information has only been collected systematically since 2009^{32, 34}.

Our first step in gathering caloric data was to compare TCCC and PepsiCo brands in the Euromonitor sales data to the list of products included in the Gladson Nutrition Database. Some brand names found in the Euromonitor sales data, such as Coca-Cola with Lime, clearly denote one specific product, but others, such as Odwalla, represent a range of products with different nutritional content. Therefore, we calculated a weighted average number of calories per eight-ounce serving for each matched brand, with the weighting of multiple products under a given brand done according to the relative sales of each product from 2005-2009 in Nielsen Homescan.

Although it is unlikely that the same beverage product with the same name will have the same formulation across every country in which it is sold, we assumed that they are similar enough to allow applying the aforementioned weighted average calories per eight-ounce serving of a particular brand sold in the US to the same brand sold in other countries. For those brands not sold in the US and, therefore, missing from the Gladson Nutrition

Database, we attempted to match the brand name with products included in Datamonitor Product Launch Analytics (PLA). Based on the available data for caloric content and serving size, the number of calories per eight-ounce serving equivalent was calculated for every product matched in Datamonitor PLA under a given brand and beverage category. The caloric content of the products was then averaged at the brand level, with the average value applied to any product under that brand that lacked calorie data. Then, the caloric content was averaged separately at the beverage category level for TCCC and PepsiCo, with the average value applied to any product/brand for which we had sales data but still lacked calorie data. Combining this data with the US averages resulted in a consolidated list of average calories per eight-ounce serving for a specific brand, beverage category, and parent company (either TCCC or PepsiCo).

Population Data

The total world population, as well as that of the specific countries under consideration (the US, Brazil, and China) was available via the World Bank for the years 2000-2009 and from the US Census Bureau (US and world totals), the Instituto Brasileiro de Geografia e Estatística, and the National Bureau of Statistics of China for 2010^{8, 35-38}.

Revenue and Profit Data

Net revenue for TCCC and PepsiCo for the years 2000-2010 was available in their respective annual reports, while net profit data were available in Euromonitor's Passport GMID⁷. Net revenue and profit for PepsiCo are reported for all divisions, including food and beverages. Revenue and profit data were only available on a global basis; thus, country-by-country breakdowns for the US, Brazil, and China were not obtainable. However, off-trade sales data were available for each country, though these are not a true proxy for profits or total sales.

Created Measures

Combining the sales data on the number of eight-ounce servings sold per year by brand, beverage category, parent company, and geographic area, with the caloric data on the average calories per eight-ounce serving of a given brand, and the population for each country in a given year, we were able to calculate: (i) the total volume sold per capita per year (in ounces) for each company (TCCC or PepsiCo) and beverage category; (ii) the total calories sold per capita per year for each company and beverage category; and (iii) the calories per ounce sold per year for each company and beverage category. We then converted these values to milliliters, kilojoules, or kilojoules per 100 milliliters sold, where appropriate.

Descriptive Trend Analysis

Because the data set we constructed contains all aggregate measures with no variance, we were unable to conduct any statistical tests on the changes in per capita volume or energy sold by TCCC or PepsiCo during the period 2000-2010. Rather, we generated simple measurements of percentage differences between (i) 2000 and 2005; and (ii) 2005 and 2010 in order to examine these changes over time.

III. Results

Energy and Volume Sold Per Capita from 2000-2010

Worldwide—Overall, TCCC and PepsiCo have both increased the energy and volume sold per capita over the last ten years on a global scale. The overarching upward trajectory, however, masks a static trend in CSD and more volatile increases in other major beverage

categories. Between 2000 and 2010, the per capita energy sold from CSD increased five percent for TCCC, from 34.9 to 36.6 kJ/person/day (or 12,752 to 13,375 kJ/person/year), while they decreased one percent for PepsiCo, from 18.2 to 18.0 kJ/person/day (or 6,651 to 6,581 kJ/person/year). Meanwhile, both bottled water (including flavored and functional water) and sports and energy drinks showed dramatic increases over the same time period, with bottled water sales increasing from 0.1 to 0.6 kJ/person/day (or 22 to 229 kJ/person/year) and sports and energy drink sales from 0.4 to 1.0 kJ/person/day (or 132 to 358 kJ/person/year) for TCCC. PepsiCo's brands mirrored these changes, with bottled water sales increasing from 0.0 to 1.8 kJ/person/day (or 11 to 277 kJ/person/year) and sports and energy drink sales from 0.0 to 1.4 kJ/person/day (or 18 to 513 kJ/person/year) (see Table 1 Panel A2 and Figure 1). Globally, across all beverage categories, the energy sold per capita rose globally for both TCCC and PepsiCo during this period, and beverage products from these two companies alone amounted to 65 kJ/person/day in 2010.

Per capita volume sales showed similar worldwide trends over the last decade, with modest increases in sales of CSD alongside marked increases in bottled water, fruit/vegetable juice, and sports and energy drinks. For TCCC brands, volume per capita sold in 2000 and 2010 increased from 0.9 to 5.7 mL/day (or 311 to 2,070 mL/year) for bottled water, 26.6 to 28.9 mL/day (or 9,722 to 10,559 mL/year) for CSD, 1.3 to 2.2 mL/day (or 456 to 798 mL/year) for fruit/vegetable juice, and 0.4 to 1.1 mL/day (or 152 to 393 mL/year) for sports and energy drinks. Although per capita CSD volume sales did not change much, PepsiCo brands in other beverage categories experienced similar growth in volume per capita sold over the period 2000-2010, increasing from 0.3 to 2.7 mL/day (or 104 to 971 mL/year) for bottled water, 0.9 to 1.3 mL/day (or 316 to 468 mL/year) for fruit/vegetable juice, and 0.1 to 1.8 mL/day (or 25 to 672 mL/year) for sports and energy drinks. While CSD was the dominant beverage category in 2000 for both companies, representing 89 percent of per capita volume sold for TCCC and 91 percent for PepsiCo, expansion and more rapid growth in other soft drink categories reduced the share of CSD by 2010 to 74 percent and 68 percent for TCCC and PepsiCo, respectively. Table 1 Panel A2 shows the global daily per capita volume sold across these soft drink categories for TCCC and PepsiCo from 2000-2010.

US, Brazil, and China—The results for the US, Brazil, and China show different trends in the beverage portfolios. Despite the global increase in energy and volume sold per capita from 2000-2010, there is a clear decrease in energy and volume sold per capita by TCCC and PepsiCo in the US over the same time period (see Figure 2). Trends in bottled water and sports and energy drinks mirrored the global trends, with large increases in per capita sales, but this was offset by sizeable decreases in the CSD category. TCCC sold 177 kJ/person/day of CSD in the US in 2010, down 24 percent from 232 kJ/person/day in 2000, while PepsiCo sold 154 kJ/person/day of CSD in 2010, down 28 percent from 214 kJ/person/day in 2000. Despite these declines, across all beverage categories, the daily energy sold per capita from these two companies alone still amounted to 427 kJ/person/day in 2010 (see Table 1 Panel B1). Per capita CSD volume sold over the same period also declined, from 212 to 178 mL/person/day for TCCC and 160 to 126 mL/person/day for PepsiCo (see Table 1 Panel B2).

Meanwhile, in Brazil, daily energy per capita sold by TCCC increased 41 percent between 2000 and 2010, while daily energy per capita sold by PepsiCo rose 168 percent, largely due to increases in energy from CSD. Energy from CSD sold by TCCC rose 36 percent from 127 kJ/person/day in 2000 to 173 kJ/person/day in 2010. Energy from CSD sold by PepsiCo also rose in Brazil, to 23 kJ/person/day in 2010, up from 13 kJ/person/day in 2000 (see Table 1 Panel C1 and Figure 3).

Likewise, in China, daily energy per capita sold by TCCC increased 215 percent between 2000 and 2010, while daily energy per capita sold by PepsiCo rose 147 percent, also driven

by CSD. Energy from CSD sold by both TCCC and PepsiCo experienced an even stronger upward growth trend in China between 2000 and 2010 (see Table 1 Panel D1 and Figure 4), increasing 141 and 127 percent, respectively, to 22 kJ/person/day for TCCC brands and 13 kJ/person/day for PepsiCo brands in 2010. In addition, energy from TCCC's bottled waters, fruit/vegetable juices, and RTD teas have also contributed to increases in daily energy sold per capita.

In both Brazil and China, daily per capita volume sales of soft drinks increased 269 percent and 147 percent for TCCC and PepsiCo, respectively, between 2000 and 2010. In Brazil, volume sold per capita for CSD rose 40 and 86 percent for TCCC and PepsiCo, respectively, while, in China, the gains were 145 and 127 percent. By 2010, TCCC sold 127 mL/person/day in Brazil and 14.1 mL/person/day of its CSD brands, while PepsiCo sold 14 mL/person/day in Brazil and 7.4 mL/person/day in China.

Companies' Wealth: Total Revenue from 2000-2010

Worldwide—In tandem with continued sales volume growth, TCCC and PepsiCo have achieved increases in both net revenue and net profit during the last decade (see Table 2). Aside from a slight downturn that mirrored the overall economic slowdown in 2008-2009, TCCC's net revenue increased more than 100 percent from 2000 to 2010, reaching USD 35,119 million, while PepsiCo's net revenue rose 159 percent during the same period, up to USD 57,838 million in 2010^{39, 40}. TCCC's global profit showed even more remarkable gains, rising from USD 2,177 million in 2000 to USD 11,859 million in 2010, an increase of more than 400 percent. Likewise, PepsiCo's net profit rose by nearly 150 percent over the same period, up to USD 6,320 million by 2010⁷.

US, Brazil, and China—Although TCCC and PepsiCo grew in both revenue and profit since 2000, the lack of available financial data at the country level does not allow us to examine with certainty, whether these trends are evident in the US, Brazil, and China. Thus, we employed off-trade value sales in each country as proxies for revenue/profit and examined changes at the country level (see Table 3). After growing by four percent in the first half of the decade, TCCC's CSD sales in the US fell 13 percent between 2005 (USD 15,318 million) and 2010 (USD 13,348 million), for a total decline of 9 percent over the period 2000-2010. PepsiCo's CSD sales showed similar trends, increasing by four percent from 2000-2005 and then falling 17 percent from USD 11,755 million in 2005 to USD 9,792 million in 2010, for a total decline of 13 percent⁷.

Off-trade CSD value sales show rapid expansion in both Brazil and China. In Brazil, although TCCC's CSD sales fell 17 percent between 2000 and 2005, they more than doubled by 2010, reaching USD 5,686 million, for total growth of 72 percent over the decade. PepsiCo's CSD sales grew steadily from 2000 (USD 293 million) to 2010 (USD 675 million), increasing by 131 percent. Likewise, sales of CSD in China increased 149 percent for TCCC and 129 percent for PepsiCo from 2000 to 2010, reaching USD 3,539 million and USD 1,653 million, respectively⁷.

Consumers' Health: Average Energy Density of Beverages Sold from 2000-2010

Worldwide—While TCCC and PepsiCo's energy per capita sold increased globally over the last decade, with particularly strong growth in developing countries such as Brazil and China, the changes in the average energy density of products sold are a better indicator of whether healthier beverage products are, indeed, making an impact in the marketplace. We do so by examining changes in kilojoules per 100 milliliters sold during this period (see Table 4 and Figure 5). Worldwide, from 2000 to 2010, the average energy density of CSD sold by TCCC fell from 1.31 to 1.27 kJ/100 mL, while that of PepsiCo's CSD brands fell

from 1.46 to 1.44 kJ/100 mL, providing slight evidence of a shift to lower-energy CSD products, even as overall energy per capita sold continued to grow.

However, these trends in CSD are being offset by other beverage categories. Worldwide, the average energy density of both bottled water and sports and energy drinks sold has increased over the last ten years by 0.04 and 0.18 kJ/100 mL for TCCC and PepsiCo's bottled water brands, as well as by 0.04 and 0.03 kJ/100 mL for TCCC and PepsiCo's sports and energy drink brands (see Table 4 Panel A).

US, Brazil, and China—In tandem with the downtrend in the US CSD market, between 2000 and 2010, the average energy density of TCCC's CSD brands sold in the US decreased from 1.09 to 0.99 kJ/100 mL, while PepsiCo's went from 1.34 to 1.22 kJ/100 mL. Thus, while volume sales and revenue growth in recent years have been elusive in the US CSD market, there is evidence of a shift from full-calorie to lower-calorie CSD. There is less evidence of a shift to lower-energy CSD in developing markets such as Brazil and China, where growth in all major soft drink categories has remained strong during the last decade. Although market research shows that full-calorie CSD continue to show strong growth in Brazil⁴¹, there was still a slight decrease in the energy density of CSD sold from 2000 to 2010. For TCCC brands, the energy density of CSD went from 1.40 kJ/100 mL in 2000 to 1.37 kJ/100 mL in 2010, while PepsiCo brands decreased from 1.78 to 1.64 kJ/100 mL over the same period. Although the energy density of CSD sold by TCCC in China decreased slightly from 1.56 to 1.53 kJ/100 mL over this period, that for PepsiCo remained fairly constant, at 1.76 kJ/100 mL in 2000 and 1.75 kJ/100 mL in 2010.

Again, these country-specific trends in CSD may be offset by other beverage categories. In the US and China, we see that the average energy density of TCCC bottled water has increased by 0.19 kJ/100 mL and by 0.13 kJ/100 mL, respectively. In the US, the average energy density of sports and energy drinks has also risen slightly (see Table 4).

IV. Discussion

Consumption of soft drinks and other beverages has been found to be strongly associated with weight gain, obesity, and higher rates of other cardio-metabolic problems, and some global food companies have begun responding to public health concerns and consumer demands to change their products and portfolios. We examined if and how the two largest global beverage companies, TCCC and PepsiCo, have adjusted their product portfolios globally and in three countries. Globally, across all beverage categories and for CSD, energy per capita sold has increased, as have revenues. Meanwhile, average energy density (kJ/100 mL) has declined slightly for CSD, but rose for bottled water and sports and energy drinks, suggesting potential offsetting patterns of change across beverage categories.

In addition, the three countries represent quite different patterns and trends. In the US, the mix of beverages has shown a decline in energy sold per capita, but the fact that these two companies combined still sell on average 427 kJ/person/day (or 102 kcal/person/day) from beverages alone is not trivial, given current evidence that the energy gap in the US is around 100-165 kcal/day⁴²⁻⁴⁴. In comparing the US case to Brazil and China, the somewhat positive trend in the US may be at the expense of limited growth in profits for the companies within the US. It is possible that these companies are “sacrificing” growth in the US and turning to other countries. This might have serious health implications for these countries, given the large population bases and potential constraints on healthcare access. It is also possible that the healthier products gradually entering the US market may eventually find their way to other countries, particularly if consumers and public health advocates begin pressuring the

food industry to improve their products globally, or if the sugar content of these beverages is taxed¹⁰.

Many of the reformulations of TCCC and PepsiCo's products involve using non-nutritive/artificial sweeteners, so it is important to keep in mind the potential health implications of these sweeteners, as well as their effect on other dietary patterns. Several major longitudinal studies report that consumption of diet beverages is linked with increased cardio-metabolic risks⁴⁵⁻⁴⁷. Currently, the American Diabetes Association and many weight loss programs suggest these beverages as a means to reduce energy intake, but the data supporting these recommendations are limited. The dietary habits of weight loss maintainers include higher intakes of artificially-sweetened beverages compared to persons who were always normal weight⁴⁸, but there is still no consensus on the usefulness of substituting artificial sweeteners for sugar in the context of weight control^{49, 50}. Two recent studies suggest that it is the food intake of diet beverage consumers rather than the non-nutritive sweetened beverages that matters^{51, 52}; however there are many unresolved issues related to the impact of non-nutritive sweetener intake on health.

As TCCC and PepsiCo carried out these changes in their respective product lines, the CSD per capita energy sold by these companies decreased in the US from 2000 to 2010, though this was offset by increases in per capita energy sold in Brazil, China, and globally over the same period. However, despite continued increases in the energy sold by TCCC and PepsiCo throughout much of the world, the average energy density of CSD sold declined during the last decade, both in individual countries, such as the US and Brazil, as well as on a global scale, suggesting a substitution of lower- or zero-calorie products for their full-calorie equivalents. These trends appear to be most advanced in the US but, as obesity and related health effects are a global concern, it will be important for companies such as TCCC and PepsiCo to focus efforts in developing countries with large population bases, where growth in soft drink sales is particularly strong and CSD make up the bulk of these sales.

Even as TCCC and PepsiCo revamped existing products and expanded their "healthier" offerings through investments and acquisitions, both companies were able to retain profitability over the last decade, increasing both net revenue and profit for their global operations. Although the overall volume sold per capita was relatively flat for these companies in the US, as sales peaked in 2005-2006 and subsequently declined to earlier levels, sales were robust in developing countries such as Brazil and China, with off-trade values sales (our proxy for profit) increasing year-over-year. Although value sales of CSD declined in the US from 2000 to 2010, overall soft drinks sales increased 12 percent for TCCC and 22 percent for PepsiCo, demonstrating that these companies can profit even as their portfolios shift away from CSD.

We have provided only a glimpse into the role of global food and beverage companies by focusing on soft drinks (particularly CSD) and the two major companies in that category. Together, TCCC and PepsiCo represent 69 percent of the global CSD market, and they have a dominant combined market share in each of our countries of interest, namely the US (71 percent), Brazil (64 percent), and China (91 percent)⁷. However, global companies such as these are not the only contributors to our food supply. In many countries, domestic companies have a strong influence, and partnerships, joint ventures, and distribution rights greatly enhance the complexity of understanding the food supply chain. Regardless, it is important for global companies to be at the forefront of the movement towards healthier food and beverage options, as they set the tone not only for their peers but also for local and domestic companies. Consequently, their leadership has the potential to influence consumers far beyond their actual market shares if they significantly change their portfolios towards healthier product mixes.

Our results must be considered in light of several limitations we faced in carrying out this work. First, the recent global recession affected the US relatively more than China and Brazil⁵³⁻⁵⁶. A resurgent global economy might have led to trends seen in Brazil and China and mirrored in other countries. Second, the Euromonitor sales data on beverage brands designated as linked with TCCC or PepsiCo may omit some local brands affiliated with these companies. In addition, through the Gladson Nutrition Database, we have access to comprehensive nutrition information for US products and have used that to impute calorie data for other countries, potentially decreasing the accuracy of our non-US results. Moreover, as the sales data are reported by beverage categories defined by Euromonitor, we were unable to classify brands or products in a different manner, such as separating cola and non-cola CSD or full-calorie/regular and low-calorie CSD. Lastly, as TCCC and PepsiCo only report their global financial results, we could not identify country-specific profitability. We also had to examine PepsiCo's financial results across all divisions, which includes a range of both food and beverage products, while TCCC is focused on beverages only.

This study points out complex trends. On the one hand, TCCC and PepsiCo have rapidly increased beverage sales globally and in Brazil and China, with large increases in total energy sold over the last ten years. On the other hand, it appears that these two largest market players are adjusting their product portfolios in ways that increase lower-calorie options for consumers, particularly within CSD. While the healthier product trends are most visible in the US, there is evidence that the changes are spreading to developing countries as well. These trends are small compared to the major adverse impact caloric beverages, be they fruit juice, sports and energy drinks, or CSD, have on health. This paper has shown that it is possible for these global giants to be wealthier while providing a slightly healthier profile in the US. Is it possible for global food and beverage companies to improve the nutritional quality of their products *globally* without sacrificing profits? This is not known, and some have called for an increase in public-private partnerships⁵⁷ or checks and balances to support public health initiatives that may run counter to the underlying profit-maximizing interests of the food and beverage industry⁵⁸. Whether it is possible for these global companies to truly reduce total energy sold (and consumed) per capita much more significantly without serious regulatory changes and strong national and global legislative initiatives remains a major public health concern.

Acknowledgments

The work presented in this paper was supported by funds from the Robert Wood Johnson Foundation (Grant 67506), the National Institutes of Health (R01 HL104580), and the University of North Carolina.

Appendix I: Euromonitor Soft Drink Definitions

Soft Drinks

This is the aggregation of the following categories: Carbonates, Fruit/vegetable juice, Bottled water, Functional drinks, Concentrates, RTD tea, RTD coffee and Asian specialty drinks.

- **Bottled Water**

This sector includes sparkling water, spring water and purified/table water. This is the aggregation of still bottled water, carbonated bottled water, flavored bottled water and functional bottled water.

- **Carbonated Bottled Water**

Includes all carbonated bottled water, excluding flavored and/or functional carbonated water. Leading brands in off-trade volume include Aqua Minerale, Ferrarelle and IVESS.

- **Flavored Bottled Water**

Includes all flavored bottled water, both carbonates and still. Commonly fruit juice or essence has a content of one milligram per liter. In addition, flavored bottled water does not normally contain colorings. The product can be either sugarized or sugar-free. Leading brands in off-trade volume include Levité, H2OH! and Be-Light.

- **Functional Bottled Water**

This subsector utilizes production techniques further than water purification processes. Functional bottled water is therefore novel as the product is altered and/or has been structurally changed to include vitamins, minerals, fruits or herbs. The subsector can be categorized into two subdivisions, these can and often do overlap. Firstly, nutraceutical or fortified waters, where various types of fruit or herbal concentrate or vitamin and mineral extracts are added to the bottled water for nutrient value. The product typically carries added calcium and vitamins, or added herbs, such as ginseng, ginkgo biloba and elderflower. Secondly, sports or fitness waters, which are altered, structured, electrolyzed or oxygenated bottled water where many of the physical or chemical characteristics of the water molecules are changed. Therefore, this enables the bottled water capable of carrying nutrients and oxygen into cells more effectively. Typically contains electrolytes, amino-acids, as well as added vitamins and minerals. Functional drinks are not included in this sector and are included in Functional drinks. Leading brands in off-trade volume include Glaceau VitaminWater, Propel Fitness Water and Dakara.

- **Still Bottled Water**

Includes all bottled water that is not carbonated, flavored and/or functional. Leading brands in off-trade volume include Aqua, Wahaha and Bonafont.

- **Carbonates/Carbonated Soft Drinks (CSD)**

Euromonitor International defines carbonates as all non-alcoholic drinks into which carbon dioxide gas has been dissolved and therefore the drink is carbonated. Carbonates are an aggregation of cola carbonates and non-cola carbonates, whether regular or low calorie. Euromonitor International included both sweetened and/or carbonates containing contain artificial sweeteners.

- **Cola Carbonates**

This is the aggregation of regular cola and low-calorie cola carbonates.

- **Concentrates**

This is the aggregation of liquid concentrates and powder concentrates. RTD concentrates volumes are calculated by applying an average conversion ratio for each country to 'as sold' liquid and powder volumes. The conversion ratios for liquid and for powder are specific to each country and can be viewed alongside 'as sold' volumes in the appendix of each country report.

- **Liquid Concentrates**

Concentrates and syrups, or alternatively known squashes or dilutables, which are diluted with water before consumption. Based commonly on fruit juices, however are also available as other in other forms, for example cola. Dilution ratios vary from country to country, due to local preferences and available brands. Leading brands in off-trade volume include Robinsons, Tucan and Brookes.

- **Powder Concentrates**

Powder concentrates, including granules and blocks/bars/cubes are diluted with water before consumption. Please note that powdered ice teas are included within this subsector. Leading brands in off-trade volume include Tang, Nestea Instant Iced Tea Mix and Nestlé Orange-C.

- **Fruit/Vegetable Juice**

This sector only includes still drinks. Carbonated varieties are represented in the non-cola carbonates subsector. Juice flavored milk drinks and fruit shakes are excluded. However, fruit/vegetable drinks that contain a minimum amount of milk are included within this sector. This sector is the aggregation of 100% juice, nectars (25-99% juice content), juice drinks (up to 24% juice content) and fruit-flavored drinks.

- **100% Juice**

This is the aggregation of not from concentrate 100% juice, reconstituted 100% juice and frozen 100% juice.

- **Juice Drinks (up to 24% Juice)**

Includes all still juice drinks made up of fresh juice or concentrate, not exceeding 24% juice content. Leading brands in off-trade volume include Minute Maid, Capri Sun and President.

- **Fruit-Flavored Drinks (No Juice Content)**

Includes all still fruit-flavored drinks that contain no juice, fruit or pulp content. Leading brands in off-trade volume include Tampico, Lala and Ami.

- **Nectars (25-99% Juice)**

This is the aggregation of unfrozen nectars and frozen nectars.

- **RTD Coffee**

Includes packaged ready-to-drink coffee. This sector does not include coffee flavored milk drinks. Leading brands in off-trade volume include Georgia, Nescafé and Suntory Boss.

- **RTD Tea**

This is the aggregation of still RTD tea and carbonated RTD tea.

- **Still RTD Tea**

Non-carbonated packaged ready-to-drink tea this does not include leaf or powdered tea. Leading brands in off-trade volume include Master Kong Green Tea, Lipton and Nestea Lemon Tea.

- **Carbonated RTD Tea**

Carbonated packaged ready-to-drink tea, this does not include leaf or powdered tea. Leading brands in off-trade volume include Lipton Ice Tea Sparking, Rosynka and TEBS.

- **Sports and Energy Drinks**

This category is the aggregation of sports and energy drinks.

- **Energy Drinks**

These are drinks that are designed to boost energy levels. They usually contain high levels of caffeine and the amino acid taurine. Other ingredients associated with stimulating properties, such as guarana and ginseng, are also commonly used. Leading brands in off-trade volume include Red Bull, Monster and RockStar.

- **Sports Drinks**

The choice of sports drink usually depends on the provision of fluids, carbohydrates or both. Included into this subsector are isotonic, hypotonic and hypertonic sports drinks. Isotonic are products that replace lost body fluids, electrolytes (sodium, potassium and chlorides) and glucose in similar concentrations to existing body fluid without causing either swelling or shrinkage of cells. These products usually contain about 5-8% carbohydrate and are intended to be consumed during exercise and/or heat exposure. Hypotonic this product is a weaker solution than your body fluid. These drinks contain less carbohydrate and therefore have lower osmolality (fewer dissolved particles than blood). These drinks help the body to speed up water absorption and are best used when you need urgent fluid replacement, as in after exercise. These drinks are not the best for energy replacement. Hypertonic - this drink is a stronger solution than your body fluid. These drinks are designed to replace and maintain energy levels during exercise of at least one hour. They are absorbed slowly and therefore are not appropriate for fluid replacement. Leading brands in off-trade volume include Gatorade, Powerade and Aquarius.

- **Asian Specialty Drinks**

Asian specialty drinks are traditional drinks or national specialties commonly found in Asia. This is the aggregation of Asian still RTD tea, cereal-pulse based, Asian juice drinks and other Asian specialty drinks.

- **Asian Still RTD Tea**

Common flavors within this sector include the following. Chrysanthemum RTD tea (combinations include ginseng, lotus root and luohanguo), herbal RTD tea (commonly with added fruit flavor or Asian health products), winter melon RTD tea, green RTD tea (sometimes fruit flavor is added), black RTD tea (sometimes added fruit flavor), Oolong RTD tea and packaged bubble tea. Leading brands in off-trade volume include Master Kong Green Tea, Oi Ocha and Wong Lo Kat Herbal Tea.

- **Asian Juice Drinks**

Fruit drinks that are common to Asia and examples include longan, lychee, kalamansi, coconut (with and without pulp), water chestnut, sour plum, red date and dragon fruit. Please note that only packaged variants are included within this subsector. Asian juice drinks and Juice drinks excluding Asian provide analysis on the juice drinks market in Asian

countries. Leading brands in off-trade volume include Coconut Palm Coconut Juice, President and I-Mer Sour Plum Juice.

– **Cereal/Pulse-based Drinks**

Includes packaged barley, lemon barley, rice, taho, and soya bean based drinks. Please note that soy milk is not included within this subsector. Leading brands in off-trade volume include Yeo's Soya Bean Drink, Vitasoy Soya Bean Milk.

– **Other Asian Specialty Drinks**

Traditional Asian speciality drinks not covered under Asian still RTD tea, cereal-pulse based and Asian juice drinks, which examples include the following products, Bandung (rose syrup with milk), bird's nest, tamarind juice, ginger, lemongrass, roselle, zalaka, jelly drinks including grass jelly (cincau) and sugar cane. Leading brands in off-trade volume include Lolo Almond Juice, Calpis Water and Kaki Tiga.

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Acronyms and Abbreviations

SSB	Sugar-sweetened beverage(s)
CSD	Carbonated soft drink(s)

RTD	Ready-to-drink
NHANES	National Health and Nutrition Examination Survey
HWCF	Healthy Weight Commitment Foundation
TCCC	The Coca-Cola Company
PepsiCo	PepsiCo Inc
GMID	Global Market Information Database (owned by Euromonitor)
CPI	Consumer Price Index
UPC	Universal Product Code
PLA	Product Launch Analytics (owned by Datamonitor)

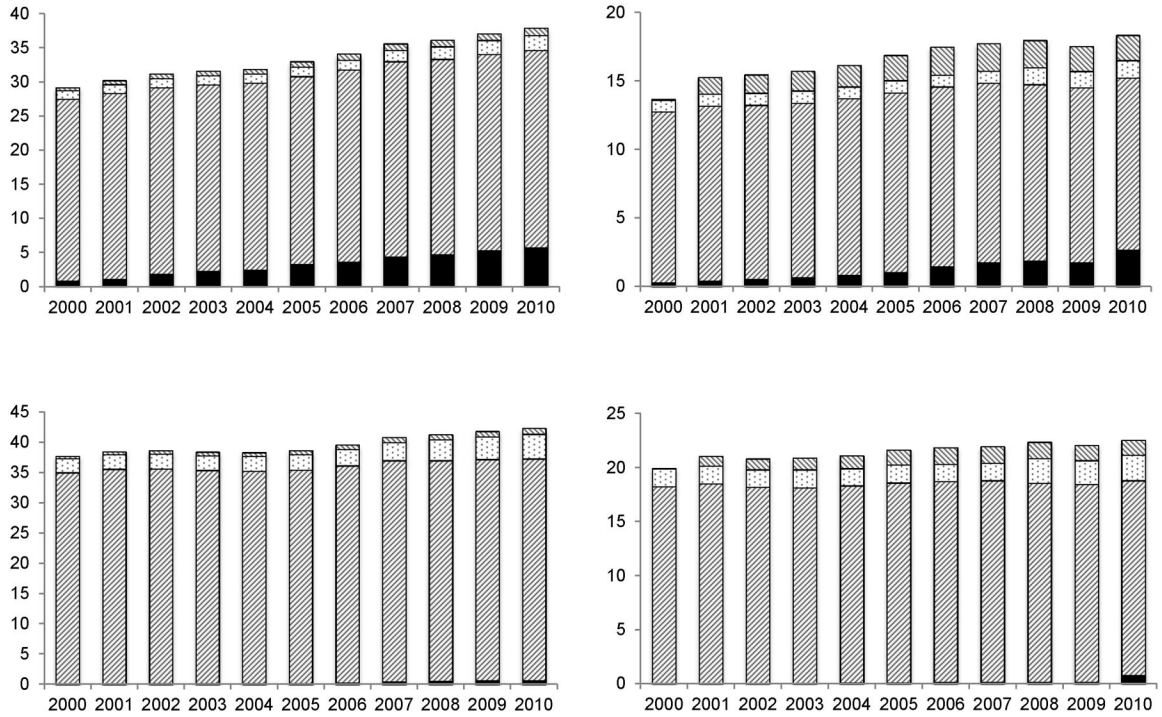


Figure 1. Global Trends 2000-2010 in Daily Energy and Volume Sold
 A. Per Capita Daily Volume Sold (mL) The Coca-Cola Company – World
 B. Per Capita Daily Volume Sold (mL) PepsiCo - World
 C. Per Capita Daily Energy Sold (kJ) The Coca-Cola Company - World
 D. Per Capita Daily Energy Sold (kJ) PepsiCo – World
 ■ Bottled Water ■ Carbonates ■ Fruit/Vegetable Juice ■ Sports and Energy Drinks

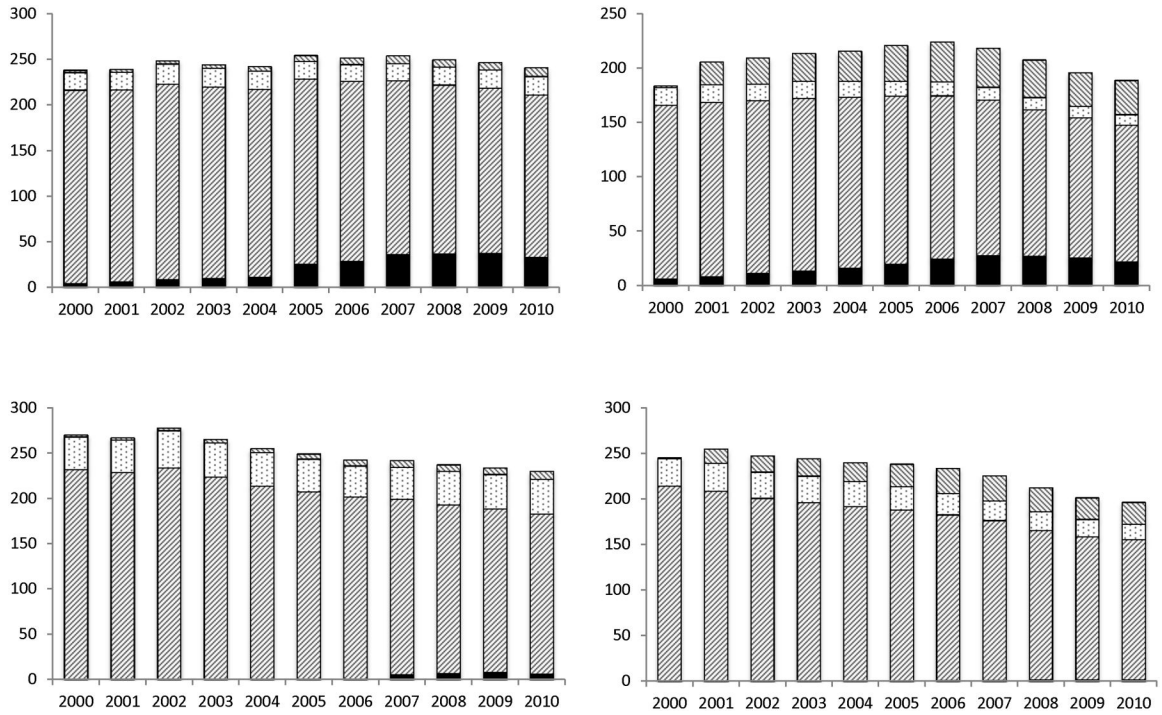


Figure 2. US Trends 2000-2010 in Daily Energy and Volume Sold

A. Per Capita Daily Volume Sold (mL) The Coca-Cola Company – US

B. Per Capita Daily Volume Sold (mL) PepsiCo - US

C. Per Capita Daily Energy Sold (kJ) The Coca-Cola Company - US

D. Per Capita Daily Energy Sold (kJ) PepsiCo – US

■ Bottled Water ■ Carbonates ■ Fruit/Vegetable Juice ■ Sports and Energy Drinks

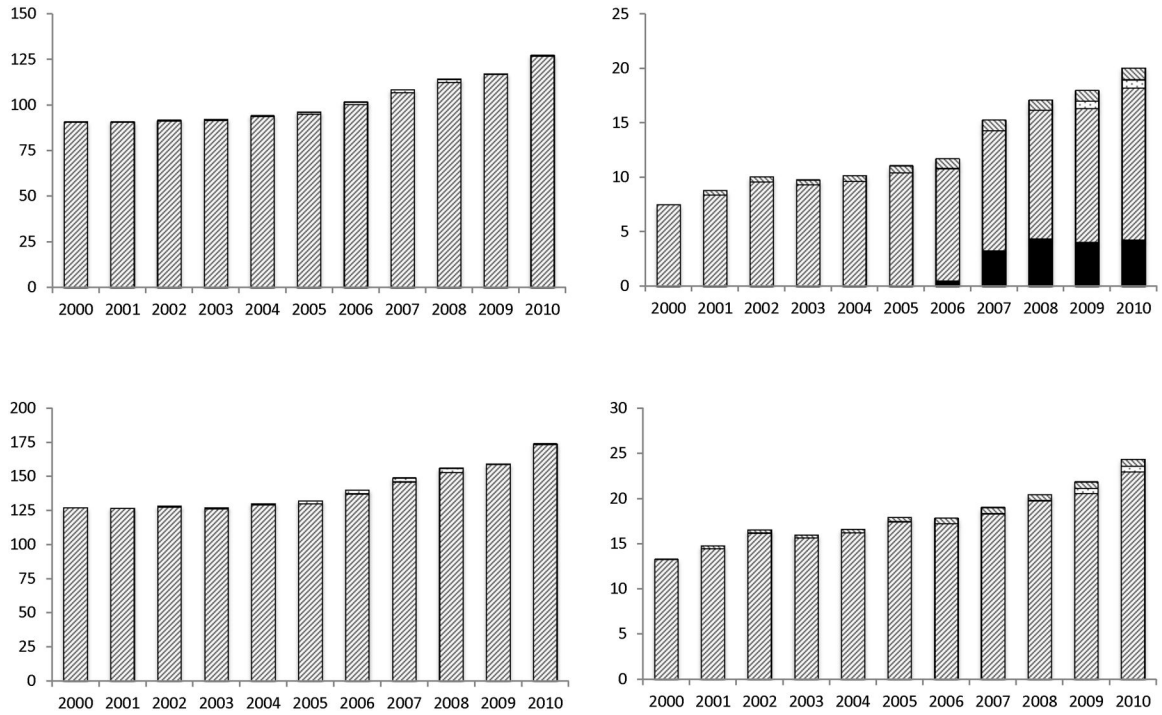


Figure 3. Brazilian Trends 2000-2010 in Daily Energy and Volume Sold
 A. Per Capita Daily Volume Sold (mL) The Coca-Cola Company – Brazil
 B. Per Capita Daily Volume Sold (mL) PepsiCo - Brazil
 C. Per Capita Daily Energy Sold (kJ) The Coca-Cola Company - Brazil
 D. Per Capita Daily Energy Sold (kJ) PepsiCo – Brazil
 ■ Bottled Water ■ Carbonates ■ Fruit/Vegetable Juice ■ Sports and Energy Drinks

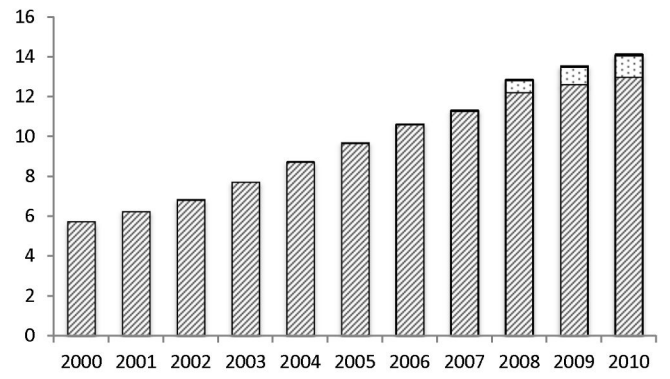
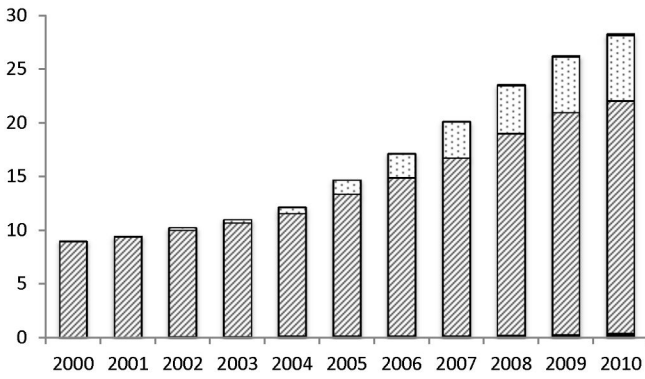
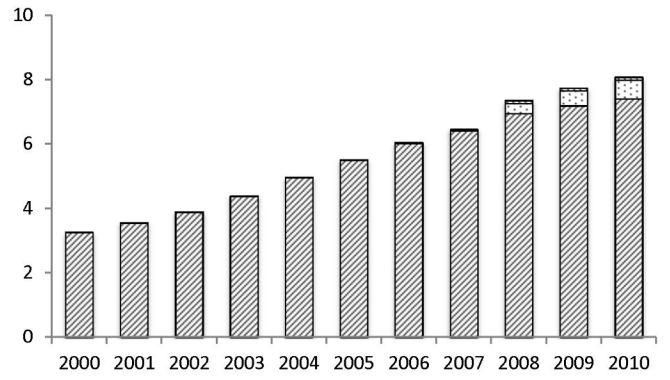
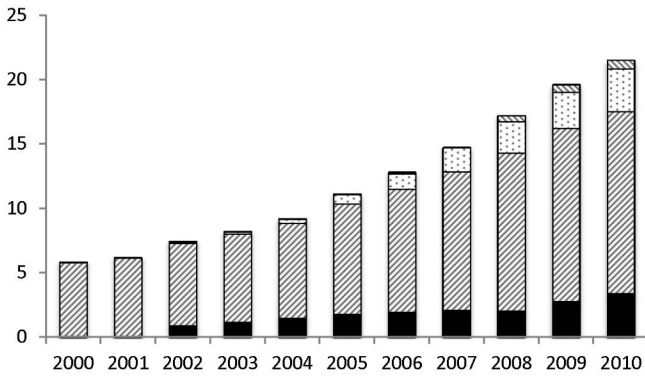


Figure 4. Chinese Trends 2000-2010 in Daily Energy and Volume Sold
A. Per Capita Daily Volume Sold (mL) The Coca-Cola Company – China
B. Per Capita Daily Volume Sold (mL) PepsiCo - China
C. Per Capita Daily Energy Sold (kJ) The Coca-Cola Company - China
D. Per Capita Daily Energy Sold (kJ) PepsiCo – China
 ■ Bottled Water ■ Carbonates ■ Fruit/Vegetable Juice ■ Sports and Energy Drinks □ RTD Tea

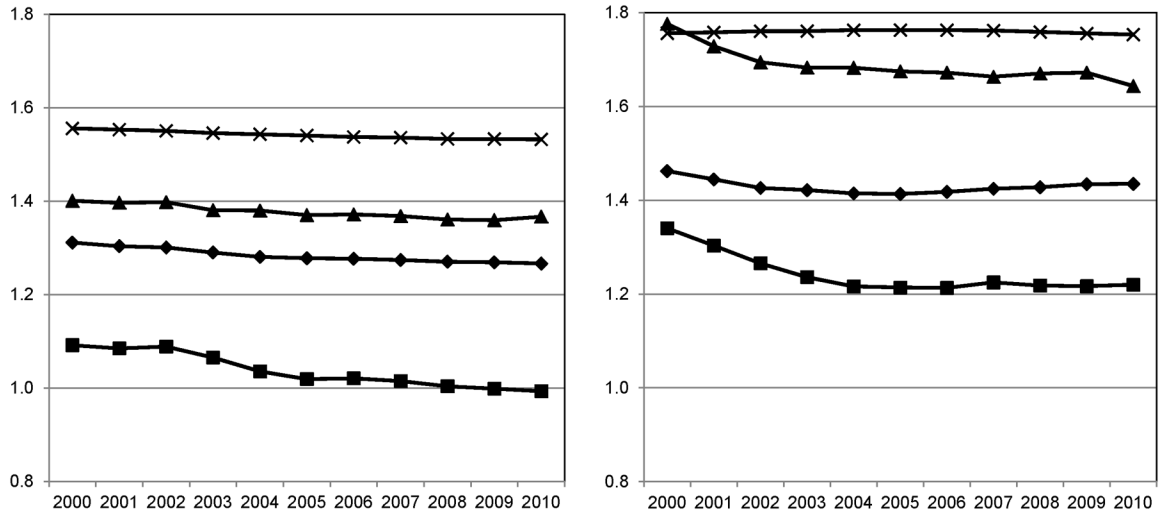


Figure 5. Trends 2000-2010 in Average Energy Density (Kilojoules per 100 Milliliters) Sold:
Global, the US, Brazil, and China
 A. Average Energy Density (kJ/100mL) Sold The Coca-Cola Company – Carbonates
 B. Average Energy Density (kJ/100mL) Sold PepsiCo – Carbonates
 World US Brazil China

Table 1
Trends 2000-2010 in Daily Energy and Volume Sold: Global, the US, Brazil, and China

A. World	2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)
A1. Daily energy sold per capita (kJ)								
TCCC Total	38.2	38.9	39.2	41.3	42.3	42.8	2%	9%
TCCC Bottled Water	0.1	0.1	0.2	0.5	0.6	0.6	211%	230%
TCCC Carbonates	34.9	35.2	35.2	36.5	36.5	36.6	1%	4%
TCCC Concentrates	0.0	0.0	0.0	0.0	0.0	0.0	133%	-5%
TCCC Fruit/Vegetable Juice	2.3	2.4	2.5	3.0	3.8	4.1	10%	59%
TCCC RTD Coffee	0.4	0.4	0.4	0.4	0.3	0.3	-6%	-10%
TCCC RTD Tea	0.1	0.1	0.1	0.1	0.2	0.2	-9%	31%
TCCC Sports and Energy Drinks	0.4	0.6	0.7	0.9	0.9	1.0	95%	40%
PepsiCo Total	19.9	20.9	21.6	21.9	22.0	22.5	9%	4%
PepsiCo Bottled Water	0.0	0.1	0.1	0.1	0.1	0.8	163%	824%
PepsiCo Carbonates	18.2	18.1	18.5	18.7	18.3	18.0	1%	-3%
PepsiCo Concentrates	0.0	0.0	0.0	0.0	0.0	0.0	-5%	-20%
PepsiCo Fruit/Vegetable Juice	1.6	1.7	1.7	1.6	2.2	2.3	4%	40%
PepsiCo RTD Tea	0.0	0.0	0.0	0.0	0.0	0.0	201%	-16%
PepsiCo Sports and Energy Drinks	0.0	1.1	1.4	1.5	1.4	1.4	2669%	2%
A. World								
A2. Daily volume sold per capita (mL)								
TCCC Total	30.0	32.5	33.9	36.5	38.0	38.9	13%	15%
TCCC Bottled Water	0.9	2.3	3.2	4.3	5.3	5.7	280%	75%
TCCC Carbonates	26.6	27.3	27.6	28.7	28.8	28.9	3%	5%
TCCC Concentrates	0.0	0.0	0.0	0.0	0.0	0.0	102%	-7%
TCCC Fruit/Vegetable Juice	1.3	1.3	1.4	1.6	2.0	2.2	10%	60%
TCCC RTD Coffee	0.4	0.4	0.3	0.3	0.3	0.3	-6%	-10%
TCCC RTD Tea	0.5	0.5	0.6	0.6	0.7	0.7	25%	25%
TCCC Sports and Energy Drinks	0.4	0.7	0.8	1.0	1.0	1.1	97%	31%
PepsiCo Total	13.7	15.7	16.9	17.8	17.6	18.4	23%	9%
PepsiCo Bottled Water	0.3	0.7	1.0	1.8	1.7	2.7	264%	156%
PepsiCo Carbonates	12.5	12.7	13.1	13.1	12.8	12.6	5%	-4%

A. World										
A2. Daily volume sold per capita (mL)										
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)		% Change (2005-2010)	
PepsiCo Concentrates	0.0	0.0	0.0	0.0	0.0	0.0	-5%		-20%	
PepsiCo Fruit/Vegetable Juice	0.9	0.9	0.9	0.9	1.2	1.3	5%		41%	
PepsiCo RTD Tea	0.0	0.0	0.0	0.0	0.0	0.0	201%		-16%	
PepsiCo Sports and Energy Drinks	0.1	1.4	1.8	2.0	1.8	1.8	2592%		0%	
B. United States										
B1. Daily energy sold per capita (kJ)										
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)		% Change (2005-2010)	
TCCC Total	270.3	265.3	249.3	242.4	234.3	230.6	-8%		-7%	
TCCC Bottled Water	0.0	0.0	0.0	5.3	7.7	6.2	N/A		N/A	
TCCC Carbonates	231.8	223.6	207.5	193.8	180.9	176.7	-10%		-15%	
TCCC Fruit/Vegetable Juice	36.3	38.1	36.1	35.6	38.1	38.4	-1%		6%	
TCCC RTD Coffee	0.0	0.0	0.0	0.0	0.0	0.0	N/A		N/A	
TCCC RTD Tea	0.0	0.0	0.0	0.1	0.3	0.6	N/A		N/A	
TCCC Sports and Energy Drinks	2.2	3.5	5.7	7.6	7.3	8.7	159%		53%	
PepsiCo Total	245.3	244.4	238.4	225.5	201.4	196.4	-3%		-18%	
PepsiCo Bottled Water	0.0	0.2	0.4	1.2	1.5	1.9	2024%		433%	
PepsiCo Carbonates	214.2	195.9	187.8	175.2	156.9	153.5	-12%		-18%	
PepsiCo Fruit/Vegetable Juice	30.1	29.1	25.5	21.8	19.2	17.2	-15%		-33%	
PepsiCo Sports and Energy Drinks	1.0	19.2	24.7	27.2	23.7	23.9	2360%		-3%	
B. United States										
B2. Daily volume sold per capita (mL)										
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)		% Change (2005-2010)	
TCCC Total	238.3	244.5	254.6	254.2	247.1	241.6	7%		-5%	
TCCC Bottled Water	4.1	10.0	25.3	35.8	37.4	33.1	519%		31%	
TCCC Carbonates	212.3	209.9	203.5	190.9	181.1	177.9	-4%		-13%	
TCCC Fruit/Vegetable Juice	19.5	20.5	19.4	19.0	20.3	20.4	-1%		5%	
TCCC RTD Coffee	0.0	0.0	0.0	0.0	0.0	0.0	N/A		N/A	
TCCC RTD Tea	0.0	0.0	0.0	0.1	0.3	0.6	N/A		N/A	
TCCC Sports and Energy Drinks	2.5	4.1	6.4	8.4	8.0	9.6	158%		50%	
PepsiCo Total	183.6	213.5	220.9	218.3	196.0	188.8	20%		-15%	
PepsiCo Bottled Water	6.3	13.8	19.6	27.6	25.3	21.9	211%		12%	
PepsiCo Carbonates	159.8	158.5	154.7	143.1	129.0	125.8	-3%		-19%	
PepsiCo Fruit/Vegetable Juice	16.1	15.6	13.7	11.8	10.5	9.5	-15%		-31%	

B. United States		2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)
B2. Daily volume sold per capita (mL)									
PepsiCo	Sports and Energy Drinks	1.3	25.6	32.9	35.9	31.2	31.5	2338%	-4%
C. Brazil									
C1. Daily energy sold per capita (kJ)									
TCCC	Total	127.2	127.3	132.3	149.7	159.8	174.3	4%	32%
TCCC	Bottled Water	0.1	0.1	0.1	0.1	0.1	0.1	34%	2%
TCCC	Carbonates	127.1	126.4	130.0	146.0	158.6	173.4	2%	33%
TCCC	Fruit/Vegetable Juice	0.0	0.7	2.1	2.8	0.0	0.0	N/A	-100%
TCCC	RTD Tea	0.0	0.0	0.0	0.7	0.7	0.3	N/A	N/A
TCCC	Sports and Energy Drinks	0.0	0.1	0.1	0.1	0.4	0.5	N/A	315%
PepsiCo	Total	13.3	16.0	17.9	19.0	21.9	24.4	35%	36%
PepsiCo	Bottled Water	0.0	0.0	0.0	0.0	0.0	0.0	N/A	N/A
PepsiCo	Carbonates	13.3	15.7	17.5	18.3	20.6	22.9	31%	31%
PepsiCo	Fruit/Vegetable Juice	0.0	0.0	0.0	0.0	0.6	0.6	N/A	N/A
PepsiCo	Sports and Energy Drinks	0.0	0.3	0.5	0.7	0.7	0.8	N/A	66%
C. Brazil									
C2. Daily volume sold per capita (mL)									
TCCC	Total	90.9	92.2	96.3	109.3	118.0	128.3	6%	33%
TCCC	Bottled Water	0.1	0.2	0.2	0.2	0.2	0.2	34%	2%
TCCC	Carbonates	90.7	91.5	94.9	106.7	116.7	126.8	5%	34%
TCCC	Fruit/Vegetable Juice	0.0	0.4	1.2	1.6	0.0	0.0	N/A	-100%
TCCC	RTD Tea	0.0	0.0	0.0	0.8	0.8	1.0	N/A	N/A
TCCC	Sports and Energy Drinks	0.0	0.0	0.1	0.1	0.3	0.4	N/A	614%
PepsiCo	Total	7.5	9.8	11.1	15.3	18.0	20.0	48%	81%
PepsiCo	Bottled Water	0.0	0.0	0.0	3.3	4.0	4.3	N/A	N/A
PepsiCo	Carbonates	7.5	9.3	10.4	11.0	12.3	14.0	39%	34%
PepsiCo	Fruit/Vegetable Juice	0.0	0.0	0.0	0.0	0.7	0.8	N/A	N/A
PepsiCo	Sports and Energy Drinks	0.0	0.5	0.6	1.0	1.0	1.1	N/A	66%
D. China									
D1. Daily energy sold per capita (kJ)									
TCCC	Total	9.0	11.0	14.7	20.1	26.3	28.3	64%	92%
TCCC	Bottled Water	0.0	0.1	0.2	0.2	0.3	0.4	N/A	146%

D. China		2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)
D1. Daily energy sold per capita (kJ)									
TCCC	Carbonates	9.0	10.6	13.2	16.5	20.7	21.6	47%	64%
TCCC	Fruit/Vegetable Juice	0.0	0.3	1.3	3.4	5.1	6.0	7481%	365%
TCCC	RTD Tea	0.0	0.0	0.0	0.0	0.2	0.2	312%	836%
PepsiCo	Total	5.7	7.7	9.7	11.3	13.6	14.1	69%	46%
PepsiCo	Carbonates	5.7	7.7	9.7	11.3	12.6	13.0	69%	34%
PepsiCo	Fruit/Vegetable Juice	0.0	0.0	0.0	0.0	0.9	1.1	N/A	N/A
PepsiCo	Sports and Energy Drinks	0.0	0.0	0.0	0.0	0.1	0.1	N/A	313%
D. China									
D2. Daily volume sold per capita (mL)									
TCCC	Total	5.8	8.2	11.2	14.7	19.6	21.5	91%	93%
TCCC	Bottled Water	0.0	1.2	1.8	2.1	2.7	3.4	3535%	90%
TCCC	Carbonates	5.8	6.8	8.6	10.8	13.5	14.1	49%	65%
TCCC	Fruit/Vegetable Juice	0.0	0.2	0.7	1.9	2.8	3.3	7061%	365%
TCCC	RTD Tea	0.0	0.0	0.1	0.0	0.6	0.7	312%	836%
PepsiCo	Total	3.3	4.4	5.5	6.5	7.7	8.1	69%	47%
PepsiCo	Carbonates	3.3	4.4	5.5	6.4	7.2	7.4	68%	35%
PepsiCo	Fruit/Vegetable Juice	0.0	0.0	0.0	0.0	0.5	0.6	N/A	N/A
PepsiCo	Sports and Energy Drinks	0.0	0.0	0.0	0.0	0.1	0.1	N/A	313%

Table 2

Trends 2000-2010 in Global Revenue and Profit

Global Revenue and Profit (USD million)	2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)
TCCC								
Net revenue	17,354	21,044	23,104	28,857	30,990	35,119	33%	52%
Net profit	2,177	4,347	4,872	5,981	6,906	11,859	124%	143%
PepsiCo								
Net revenue	22,337	26,971	32,562	39,474	43,232	57,838	46%	78%
Net profit	2,543	3,568	4,060	5,658	5,946	6,320	60%	56%

Table 3
Trends 2000-2010 in Off-Trade Revenue from Soft Drinks: Global, the US, Brazil, and China

A. World Off-trade sales (USD million)		2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)
TCCC	Soft Drinks Total	70,685	74,191	81,423	92,195	97,059	103,630	15%	27%
TCCC	Bottled Water	1,246	2,957	4,664	7,390	8,858	9,343	274%	100%
TCCC	Carbonates	55,390	56,312	60,857	67,818	69,076	73,353	10%	21%
TCCC	Concentrates	71	119	127	125	126	142	78%	12%
TCCC	Fruit/Vegetable Juice	5,436	5,276	5,233	6,175	7,141	7,828	-4%	50%
TCCC	RTD Coffee	3,570	3,408	3,531	3,120	3,546	3,619	-1%	2%
TCCC	RTD Tea	2,970	2,910	3,186	3,139	3,653	3,996	7%	25%
TCCC	Sports and Energy Drinks	1,997	3,203	3,818	4,422	4,651	5,341	91%	40%
PepsiCo	Soft Drinks Total	28,540	35,328	40,509	44,996	44,015	46,047	42%	14%
PepsiCo	Bottled Water	728	1,506	2,104	3,625	3,331	3,721	189%	77%
PepsiCo	Carbonates	23,263	23,656	26,182	28,026	27,761	28,709	13%	10%
PepsiCo	Concentrates	25	101	105	111	99	104	322%	-1%
PepsiCo	Fruit/Vegetable Juice	4,223	4,283	4,453	4,784	5,549	6,071	5%	36%
PepsiCo	RTD Tea	9	12	49	53	50	48	478%	-2%
PepsiCo	Sports and Energy Drinks	292	5,771	7,616	8,397	7,225	7,394	2505%	-3%
B. United States Off-trade sales (USD million)		2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)
TCCC	Soft Drinks Total	18,445	19,074	20,341	21,713	21,128	20,583	10%	1%
TCCC	Bottled Water	298	599	1,721	3,284	3,577	3,211	477%	87%
TCCC	Carbonates	14,700	15,115	15,318	14,663	13,833	13,348	4%	-13%
TCCC	Concentrates	3	2	2	2	1	1	-35%	-45%
TCCC	Fruit/Vegetable Juice	3,029	2,728	2,211	2,386	2,524	2,570	-27%	16%
TCCC	RTD Coffee	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A
TCCC	RTD Tea	N/A	N/A	N/A	47	86	146	N/A	N/A
TCCC	Sports and Energy Drinks	415	626	1,089	1,331	1,106	1,308	163%	20%
PepsiCo	Soft Drinks Total	15,265	20,626	22,079	22,621	19,325	18,568	45%	-16%
PepsiCo	Bottled Water	550	1,164	1,466	2,354	1,907	1,680	166%	15%
PepsiCo	Carbonates	11,279	11,582	11,755	11,355	10,137	9,792	4%	-17%

B. United States												
Off-trade sales (USD million)												
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)	2010	2009	2010	% Change (2005-2010)
PepsiCo Concentrates	N/A	35	35	40	41	43	N/A	N/A	43	41	43	21%
PepsiCo Fruit/Vegetable Juice	3,178	3,045	2,652	2,485	2,162	1,980	-17%	-25%	1,980	2,162	1,980	-25%
PepsiCo Sports and Energy Drinks	259	4,801	6,170	6,387	5,079	5,073	2284%	-18%	5,073	5,079	5,073	-18%
C. Brazil												
Off-trade sales (USD million)												
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)	2010	2009	2010	% Change (2005-2010)
TCCC Soft Drinks Total	3,317	2,145	2,863	4,199	4,606	5,853	-14%	104%	5,853	4,606	5,853	104%
TCCC Bottled Water	4	3	3	5	6	7	-30%	132%	7	6	7	132%
TCCC Carbonates	3,313	2,113	2,743	3,952	4,486	5,686	-17%	107%	5,686	4,486	5,686	107%
TCCC Fruit/Vegetable Juice	N/A	27	109	177	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TCCC RTD Tea	N/A	N/A	N/A	55	65	87	N/A	N/A	87	65	87	N/A
TCCC Sports and Energy Drinks	N/A	3	8	9	49	73	N/A	822%	73	49	73	822%
PepsiCo Soft Drinks Total	294	272	417	558	1,083	1,398	42%	235%	1,398	1,083	1,398	235%
PepsiCo Bottled Water	1	N/A	N/A	1	260	315	N/A	N/A	315	260	315	N/A
PepsiCo Carbonates	293	233	347	435	513	675	18%	95%	675	513	675	95%
PepsiCo Fruit/Vegetable Juice	N/A	N/A	N/A	N/A	181	244	N/A	N/A	244	181	244	N/A
PepsiCo Sports and Energy Drinks	N/A	39	70	121	130	165	N/A	134%	165	130	165	134%
D. China												
Off-trade sales (USD million)												
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)	2010	2009	2010	% Change (2005-2010)
TCCC Soft Drinks Total	1,435	1,754	2,276	3,289	5,028	5,314	59%	133%	5,314	5,028	5,314	133%
TCCC Bottled Water	8	114	153	186	282	341	1891%	122%	341	282	341	122%
TCCC Carbonates	1,419	1,586	1,882	2,461	3,467	3,539	33%	88%	3,539	3,467	3,539	88%
TCCC Fruit/Vegetable Juice	2	48	218	631	1,057	1,186	8983%	444%	1,186	1,057	1,186	444%
TCCC RTD Tea	7	6	22	11	222	248	242%	1016%	248	222	248	1016%
PepsiCo Soft Drinks Total	721	949	1,135	1,352	1,865	1,896	58%	67%	1,896	1,865	1,896	67%
PepsiCo Carbonates	721	941	1,125	1,335	1,661	1,653	56%	47%	1,653	1,661	1,653	47%
PepsiCo Fruit/Vegetable Juice	N/A	N/A	N/A	N/A	167	205	N/A	N/A	205	167	205	N/A
PepsiCo Sports and Energy Drinks	N/A	8	10	17	37	38	N/A	283%	38	37	38	283%

Table 4
Trends 2000-2010 in Average Energy Density (Kilojoules per 100 Milliliters Sold): Global, the US, Brazil, and China

A. World										
Average Energy Density (kJ/100 mL)										
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)		
TCCC Bottled Water	0.07	0.06	0.06	0.11	0.12	0.11	-18%	89%		
TCCC Carbonates	1.31	1.29	1.28	1.27	1.27	1.27	-3%	-1%		
TCCC Concentrates	0.51	0.53	0.59	0.59	0.60	0.60	15%	2%		
TCCC Fruit/Vegetable Juice	1.85	1.86	1.86	1.85	1.86	1.86	0%	0%		
TCCC RTD Coffee	1.12	1.12	1.12	1.12	1.12	1.12	0%	0%		
TCCC RTD Tea	0.28	0.21	0.20	0.21	0.23	0.21	-27%	5%		
TCCC Sports and Energy Drinks	0.87	0.84	0.86	0.88	0.92	0.91	-1%	6%		
PepsiCo Bottled Water	0.11	0.09	0.08	0.08	0.07	0.29	-28%	260%		
PepsiCo Carbonates	1.46	1.42	1.41	1.42	1.43	1.44	-3%	2%		
PepsiCo Concentrates	0.62	0.62	0.62	0.62	0.62	0.62	0%	0%		
PepsiCo Fruit/Vegetable Juice	1.87	1.86	1.85	1.85	1.83	1.83	-1%	-1%		
PepsiCo RTD Tea	0.26	0.26	0.26	0.26	0.26	0.26	0%	0%		
PepsiCo Sports and Energy Drinks	0.73	0.75	0.75	0.76	0.76	0.76	3%	2%		
B. United States										
Average Energy Density (kJ/100 mL)										
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)		
TCCC Bottled Water	0.00	0.00	0.00	0.15	0.21	0.19	N/A	N/A		
TCCC Carbonates	1.09	1.07	1.02	1.02	1.00	0.99	-7%	-3%		
TCCC Fruit/Vegetable Juice	1.86	1.86	1.87	1.88	1.88	1.88	0%	1%		
TCCC RTD Tea	N/A	N/A	N/A	0.95	0.95	0.95	N/A	N/A		
TCCC Sports and Energy Drinks	0.88	0.85	0.88	0.90	0.92	0.90	0%	2%		
PepsiCo Bottled Water	0.00	0.01	0.02	0.04	0.06	0.09	584%	377%		
PepsiCo Carbonates	1.34	1.24	1.21	1.22	1.22	1.22	-9%	0%		
PepsiCo Fruit/Vegetable Juice	1.87	1.86	1.86	1.86	1.83	1.81	0%	-3%		
PepsiCo Sports and Energy Drinks	0.74	0.75	0.75	0.76	0.76	0.76	1%	1%		
C. Brazil										
Average Energy Density (kJ/100 mL)										
	2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)		
TCCC Bottled Water	0.46	0.46	0.46	0.46	0.46	0.46	0%	0%		

C. Brazil		2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)
Average Energy Density (kJ/100 mL)									
TCCC	Carbonates	1.40	1.38	1.37	1.37	1.36	1.37	-2%	0%
TCCC	Fruit/Vegetable Juice	N/A	1.74	1.79	1.79	N/A	N/A	N/A	N/A
TCCC	RTD Tea	N/A	N/A	N/A	0.84	0.84	0.26	N/A	N/A
TCCC	Sports and Energy Drinks	N/A	2.48	2.48	2.48	1.51	1.44	N/A	-42%
PepsiCo	Bottled Water	N/A	N/A	N/A	0.00	0.00	0.00	N/A	N/A
PepsiCo	Carbonates	1.78	1.68	1.67	1.66	1.67	1.64	-6%	-2%
PepsiCo	Fruit/Vegetable Juice	N/A	N/A	N/A	N/A	0.84	0.84	N/A	N/A
PepsiCo	Sports and Energy Drinks	N/A	0.72	0.72	0.72	0.72	0.72	N/A	0%
D. China		2000	2003	2005	2007	2009	2010	% Change (2000-2005)	% Change (2005-2010)
Average Energy Density (kJ/100 mL)									
TCCC	Bottled Water	0.00	0.10	0.10	0.09	0.11	0.13	N/A	30%
TCCC	Carbonates	1.56	1.55	1.54	1.54	1.53	1.53	-1%	-1%
TCCC	Fruit/Vegetable Juice	1.73	1.83	1.83	1.83	1.83	1.83	6%	0%
TCCC	RTD Tea	0.26	0.26	0.26	0.26	0.26	0.26	0%	0%
PepsiCo	Carbonates	1.76	1.76	1.76	1.76	1.76	1.75	0%	-1%
PepsiCo	Fruit/Vegetable Juice	N/A	N/A	N/A	N/A	1.87	1.87	N/A	N/A
PepsiCo	Sports and Energy Drinks	N/A	0.72	0.72	0.72	0.72	0.72	N/A	0%