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## FUNDAMENTAL FORCES AFFECTING THE U.S. FRESH BERRY AND LETTUCE/LEAFY GREEN SUBSECTORS

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In a companion article in this issue, Michael Porter's Five Forces model plus two additional forces were used to analyze fundamental forces for change in the fresh produce supply chain (see article by this author titled Fundamental Forces Affecting U.S. Fresh Produce Growers and Marketers).

To provide more detail two commodity subsectors are described below, berries and lettuce/leafy greens. Berries are considered in part because they represent greater diversity than the norm in production locations, including internationally, and therefore in grower structure. Further, a true berry subsector, as opposed to separate berry markets, has only recently emerged. This is one of the most rapidly growing and dynamic produce subsectors. In contrast, the lettuce market is relatively mature, product substitution plays an important role, and production is largely concentrated in only a few locations in the United States.

### Berry Subsector

All berries have experienced rapid growth in demand, driven partly by health and wellness benefits arising from phytochemicals with disease prevention/protective attributes, as well as due to improving quality, year-round availability, and convenient packaging. The benefits of consuming both strawberries and blueberries have been widely diffused by generic promotion programs supported by grower assessments in each industry. The berry category recently became the number one dollar category in the fresh produce department with annual projected national supermarket sales—excluding club stores, supercenters and some other formats—surpassing \$5.3 billion as of June 2011.

In the past, there were separate commodity markets for each of the berries, and strawberries represented the lion's share of berry sales. Given robust demand for all the berries over the last decade, the leading blueberry grower-shipper, Naturipe Farms, entered the strawberry industry, and the leading grower-shipper of raspberries and strawberries, Driscoll's, entered the blueberry industry. Both firms have developed strong positions in blackberries as well, which used to be more of a short-season specialty crop. This was changed by their investment in production in central Mexico to complement U.S. production, virtually creating a winter market. Varieties were identified with good flavor and supply essentially drove demand in the sense that availability and quality allowed retailers—led by Costco—to commit to including shelf-space for blackberries in their berry category planograms; consumer exposure led to product acceptance and purchasing habit.

Strong demand and the model set by these leading firms caused other shippers to attempt to become year-round and to jointly create what is now a wide-line berry subsector. Today it is becoming increasingly difficult to compete as a single berry shipper. This despite the fact that blueberries, raspberries and blackberries are perennials while strawberries are grown as an annual crop, and there are major differences between the berries in production locations by season, technologies and practices, as well as perishability. Given this diversity, there are also major differences in market share by berry type even among the wide-line berry shippers, depending on their original strengths and ability to develop new sources of supply.

In an exceptional case for the produce industry, one firm, Driscoll's, is estimated to supply around 90% of raspberry sales in conventional supermarkets. This is largely due to long-term investments in proprietary varieties and efficient growing and handling practices developed for its operations in California and central Mexico. Now that the major

berry shippers are pursuing wide-line strategies they are also attempting to gain a foothold in raspberries. If successful, this might gradually erode an important point of leverage held by Driscoll's in buyer negotiations.

### ***Blueberries***

Rapid expansion in U.S., Canadian and European demand for blueberries has stimulated a major increase in acreage globally. Blueberries are much less perishable than raspberries and strawberries, which facilitates long-distance international trade, including between hemispheres. Blueberries are grown in many states around the United States to extend seasons and there are major imports from Canada, and during the off-season from Chile and to a lesser extent Argentina; in 2010 imports totaled 41% of U.S. utilization (USDA/ERS, 2011). Recently, the leading U.S. blueberry shippers have been investing in developing blueberry production in central Mexico. If successful, this could at least partially displace southern hemisphere winter imports, given closer proximity to market.

The establishment costs of blueberries are relatively high. For example, \$25,851/acre for the first two years in the southern San Joaquin Valley of California in 2009, where a new blueberry industry is emerging (Jimenez, Klonsky and DeMoura, 2009). Despite high production costs, the adaptability of blueberries makes this industry very susceptible to new entrants at both the production and marketing levels.

In the U.S. market, four shippers control around one-third of shipments. Fragmentation on the marketing side has been growing in newly developing production regions such as Argentina, disrupting markets. However, given strong demand the global supply response continues. Price competition is the main tool used by those handlers with little investment in production and little wherewithal to provide marketing and other services to buyers, dragging down average industry pricing. Future pricing in the industry depends not only on the relative growth rates in global demand and supply, but also on the rate of consolidation of marketers/handlers.

### ***Strawberries***

In contrast to blueberries, strawberries are grown principally in California with production locations varying from south to north to extend seasons almost year-round. Florida supplements low California volume during the winter but climate precludes year-round production. In California, good production locations are quite specific by season and their proximity to high value coastal locations may somewhat limit long-term expansion. U.S. strawberries are mainly marketed domestically and in Canada. In part due to the high perishability of strawberries and the intensive growing and postharvest handling technologies used in the United States, in 2010 imports represented only 8% of supply, coming mainly from the Baja California production region of Mexico (USDA/ERS, 2011).

The number of both growers and marketers selling into the U.S. and Canadian markets is far less than for blueberries and blackberries, tending to make markets more predictable and organized; four firms are estimated to account for over 50% of strawberry shipments. The subsector has benefited from Driscoll's role as a strong and innovative leader acting as category captain and raising the competitive benchmark over time. The other leading shippers are increasingly stepping up to the new "marketing plate" and all marketers benefit from the longstanding generic promotion program of the California Strawberry Commission.

### ***New Entrants***

Since perishability limits long distance international shipping, the future outlook for strawberries depends primarily on consumer demand in the United States and Canada, rather than global demand, and on the actions of California grower-shippers. Recently, California shippers, attracted to central Mexico to produce other berries, have been investing in strawberry variety trials there. Historically, agronomic, technological, postharvest and know-how barriers limited U.S. interest in fresh-market strawberry production in central Mexico, despite the long-standing existence of a Mexican strawberry industry producing for the national fresh-market and the frozen export market.

The emerging Mexican berry cluster may help to reduce some of the barriers to entry by attracting more technology providers and breeders, and by improving postharvest handling and other infrastructure. Concerns over the availability of labor in the United States might increase incentives for future investment in a source of alternative supply in Mexico. In the long-term, if U.S. shippers should choose to seriously invest in the development of a fall/winter strawberry export industry in central Mexico and were successful, production there could gradually substitute for production in high-cost areas of southern California threatened by urbanization. The principal production region in northern California, Watsonville/Salinas, which produces for the spring and summer, should be much less affected.

Despite the investment in innovative strawberry marketing and promotion programs coming both from grower assessment dollars and shippers' additional investments to support their own brands/trade labels, the domestic competitive playing field is beginning to change slightly. California leafy green commodity shippers are finding that strawberries fit into their crop rotation patterns. Consequently, recently some leafy green shippers have begun to produce strawberries, not only adding to supply but also to the number of handlers competing for strawberry sales. Clearly, production-driven decisions of growers grounded in one commodity subsector can threaten profitability of existing players in another. This is particularly the case, if the new volume is channeled through spot market sellers as opposed to the berry shippers invested in year-round marketing programs and acting as preferred suppliers to the large buyers.

### ***Berry Substitution Effects***

To date, substitution between berries has not involved cannibalization in the sense that sales continue to grow for each of the berries, albeit at different rates and starting from very different bases, with raspberries recently experiencing the slowest growth. While the strawberry share of total berry sales is also eroding, along with the explosion in blueberry and to a lesser extent, blackberry demand, it is still the dominant berry and strawberry per capita consumption is up from 4.5 pounds in 1999 to 7.2 in 2010. While substitution effects between berries do exist for many types of usage occasions, consumers often view the different berries as complements, serving mixed berries. The complementary nature of berries has made them especially attractive to shipper investment.

### ***Firm Rivalry and Product Differentiation***

In recent years, the top berry shippers expanded the dimensions of competition beyond price by becoming year-round, wide-line, and by adding marketing and other services. However, rivalry for the top firms is intensifying as more previously seasonal or berry specific shippers adopt a similar model. Rivalry will further intensify if demand growth slows—the rapid growth rates experienced by the berry category in recent years will likely not be sustained indefinitely.

Berry shippers recognize that in order for demand to continue to expand for all of the berries, the underdeveloped foodservice channel must be tapped. This requires packaging-related product differentiation since foodservice users need different packs than retailers. In addition, the ready-to-eat (RTE) market holds great potential for both foodservice and retail markets. The easiest type of berry to offer in RTE packages are blueberries given their greater shelf-life relative to the other berries, and the fact that they only need to be washed rather than cut like RTE strawberries. Recently, RTE blueberries have been launched on fast food menus and in retail channels, an indicator of investment in new product development as a growing factor in the increasingly competitive berry subsector.

### ***Lettuce/Leafy Green Subsector***

The vast majority of iceberg, romaine and leaf lettuce is produced in California and during the winter in Arizona. The romaine and leaf lettuce shippers in California and Arizona are substantially the same as for iceberg lettuce, although market shares vary across shippers by lettuce type. The iceberg lettuce industry is one of the most concentrated in fresh produce with the top four and top eight California shippers controlling an estimated 60% and 80%, respectively, of the California and Arizona lettuce volume. In the iceberg lettuce industry, the land requirements for growing high quality product are quite specific, with the Blanco region of the Salinas Valley most coveted and tightly controlled by the same group of longstanding competitors.

Accordingly, new entrants have not been a major threat, including in other regions of North America. In 2010, imports represented only 4% of U.S. iceberg lettuce utilization (USDA/ERS, 2011), despite some growth in summer/fall export production in eastern Canada. While the expanding “local” buying trend has brought new entrants from other states into the leafy green subsector as a whole, this has largely not been the case for iceberg lettuce. In addition to the technical production constraints for iceberg lettuce, declining consumer demand has likely dissuaded new entrants.

### ***Substitutes***

Like many fresh produce items leafy greens are subject to substitutes within product categories. Romaine and other leaf lettuces have cannibalized sales from iceberg lettuce. Per capita consumption of romaine and leaf lettuces grew from 3.3 pounds in 1985 to 10.7 in 2010, while iceberg lettuce declined from 23.7 to 16.1 pounds per capita over the same period (USDA/ERS, 2011). The growth in romaine and leaf consumption has been supplied domestically; imports are rising but in 2010 still represented only 3% of U.S. utilization (USDA/ERS, 2011). For all lettuce types, most imports enter as part of the sourcing and marketing programs of California grower-shippers. This means the

lettuce subsector avoids fragmentation at the handler and importer levels, compared with many produce items which rely heavily on imports.

Over the years, the original California iceberg lettuce shippers simply changed their product mixes in response to evolving consumer preferences, while retaining marketing control of the subsector. Though rankings may have changed, the top players are the same as they were many years ago, and with the exception of Dole, most are third or fourth generation family-owned businesses.

### ***New Entrants***

In the last twenty years, the major new entrants to the lettuce/leafy green subsector came not in the bulk lettuce commodity markets, nor from foreign competitors, but in the form of fresh-cut processors offering consumers a convenient RTE substitute for bulk lettuce. Two commodity lettuce shippers developed the bagged salad industry, a family-owned grower-shipper that founded Fresh Express, and Dole. The development of the fresh-cut industry was a game changer and the existing commodity lettuce shippers faced a critical strategic decision, whether or not to enter the fresh-cut industry. Barriers to entry were and remain significant, not just from the capital investment, production and technology standpoints but from marketing challenges as well. Furthermore, many shippers have found it difficult to compete successfully in both commodity and fresh-cut markets simultaneously. However, once having entered the fresh-cut category, exit barriers are sufficient to keep marginal players in place longer than market conditions might warrant. Firms have found that adding value does not necessarily equate to greater profitability, a lesson learned, incidentally, in many fresh produce crops.

Based on retail scanner data, in 2010/11, the top two and top four branded bagged salad firms are estimated to account for 58% and 68%, respectively, of bagged salad sales in conventional supermarkets. The top four market share was even higher for many years until private label products grew as a substitute for branded bagged salads. Commodity shippers entering the fresh-cut category after its initial emergence were compelled to focus on private label sales to retailers, and the foodservice market; both very price-oriented types of buyers, but where large investments in CPG-model branded marketing programs were not required. The recent rapid growth in retailer demand for private labels—resulting from the economic downturn and noted in the companion article—is very much in evidence in this sector. Today, private label sales now comprise around one-quarter of bagged salad sales in supermarket channels, in 2011 eclipsing the market share of the second largest branded player, Dole.

Another game changer occurred in recent years with the entrance of the largest U.S. fresh-cut processor, Taylor Fresh Foods, formerly focusing on the foodservice market—a major but maturing market for fresh-cut lettuce—into the retail bagged salad category. Even in its position as the largest U.S. fresh-cut processor, as a latecomer to retail bagged salads, Taylor has increasingly pursued a private label strategy. Hence, today competition is greater than ever for both branded and private label bagged salad players, presumably discouraging further new entrants. All of these factors make the lettuce subsector one of the most affected by new entrants, despite relatively slow growth in demand for lettuce in the aggregate over all product forms. Active product differentiation strategies in the convenience-oriented fresh-cut industry continue to contribute to the launching of new products which act as substitutes for bulk products sold in the commodity market. Without an expanding pie, price competition has intensified in both segments.

### **A Note on Generic Promotion**

Firms operating in the lettuce commodity market have no industry-wide generic promotion programs to support demand. The California Iceberg Lettuce Commission promoted demand for iceberg lettuce until 1992. By this time the fresh-cut industry was emerging and shipper concentration levels were increasing; shippers eliminated this mandated marketing program in the belief that they could more effectively invest the equivalent of the assessment dollars into their own marketing programs. Per capita consumption of iceberg lettuce has since continued to decline. While it is unknown what role the demise of the commission may have played in this decline, shipper marketing programs tend to focus on commercial buyers and taking market share from competitors rather than on expanding the size of the total market, which is the purpose of generic promotion.

Grower and handler support for generic promotion in many subsectors has tended to fall along with the growth in supply-side consolidation, and in some cases with new entrants. Where generic promotion programs were eliminated consumption typically declined—for example, kiwifruit, and California tree fruit. In addition to the strawberry and blueberry industries, discussed earlier, table grapes, and avocados are examples of industries where growers and shippers are willing to invest in both generic promotion through mandated-marketing programs, and in shipper marketing programs; demand continues to grow for all of these products. Even with larger shippers, consumer brand recognition of their labels is low, a condition making generic promotion useful.

## Closing Comments

Some fresh produce commodity subsectors face sizable threats from new entrants while others do not, based on very specific seasonal growing conditions and requirements, as well as the marketing power of leading grower-shippers, and the degree of product perishability and its impact on viable shipping distances. For many commodities the threat of substitutes is greater than the threat of new entrants and the number of substitutes continues to rise in each season of the year. With growing competition, more firms are recognizing the need to invest in product promotion to defend or expand shelf-space for their commodities. Despite the documented effectiveness of generic promotion, the majority of commodity subsectors do not use this demand expansion tool. The trend is for shippers to invest more in their own labels and to employ emerging tools—such as category development and social media—to impact consumer demand for their products.

## For More Information

Jimenez, M., Klonsky, K., and De Moura, R. (2009). Sample costs to establish and produce fresh market blueberries, San Joaquin Valley-South (Tulare County). University of California Cooperative Extension.

Porter, Michael E. (2008). The five competitive forces that shape strategy. *Harvard Business Review*, January 2008, 79-93.

U.S. Department of Agriculture, Economic Research Service (USDA/ERS). (2011). Fruit situation and outlook yearbook, October 2011.

U.S. Department of Agriculture, Economic Research Service (USDA/ERS). (2011). Vegetables and melons yearbook data, May 2011.

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