Evaluation of the Refundable Market-Access-Fee Proposal as a Supply-Management Tool for the U.S. Dairy Industry

Tina L. Saitone
Richard J. Sexton[*]

The Problem: The U.S. dairy industry has been buffeted by adverse demand and supply shocks, causing unstable prices and producer losses. In addition, inherent cyclical fluctuations, due to the biological nature of the dairy production process, have become more pronounced in the current market environment.

The Proposal: Various industry groups, working in conjunction with dairy economists, have proposed plans to manage supply in the industry. Although goals are stated somewhat differently among those discussing the plan, they include both stabilizing producer prices and raising them to levels to insure producer profitability. Essential features of the proposals include assigning producers a production base tied to past production and charging a market access fee (MAF) on all production of producers who exceed their allotted base. Production bases would be adjusted periodically to account for changing demand and supply conditions. The money collected from the program would be rebated to producers whose output did not exceed their allotted base. Bases would not be transferrable but could be sold or bequeathed with the farm. Entrants into milk production would have no base and would be charged the MAF on their entire year one production, which then would then determine their base moving forward. The plan is to be enacted through federal legislation and implemented under the auspices of the U.S. Department of Agriculture.

Essential Dairy-Industry Economics: Both the demand and supply of raw milk in the U.S. are price inelastic in the short run, meaning that small shifts in demand or supply cause proportionally larger changes in price. A rule of thumb for the price elasticity of demand for raw milk is -0.5, meaning that a one percent increase in production will cause a two percent decrease in producer price, other factors constant. Volatility in the market has become more pronounced in recent years as the U.S. has become integrated into a world market for dairy products. Indeed, the relevant market appears to be worldwide for various key intermediate dairy products, such as milk powder and whey, where prices in key producing and consuming regions (U.S., E.U., and Oceania) move in comparative lockstep—the "law of one price" applies.

Essential Economics of Supply-Management Programs: Supply-management programs have a long history in agriculture in the U.S. and elsewhere, but the track record of success is mixed at best. Supply-management programs suffer from several pervasive problems. On the positive side some aspects of the U.S dairy

[*] Tina L. Saitone is Post-Doctoral Scholar and Richard J. Sexton is Professor, Department of Agricultural and Resource Economics, University of California, Davis.

industry and the proposed MAF are conducive to a successful program. The inelasticity of demand for raw milk means that a given percentage reduction in supply will increase producer price disproportionately. Production of each producer is recorded by his/her processor, which facilitates compliance with the program. Implementation of the program nationally through federal legislation and making participation mandatory reduces markedly a free rider problem that is inherent to supply-management programs. Free riders are those who do not participate in the supply management but do capture the benefits in the form of higher prices. Free riders always do better than those who participate in the program, creating an incentive to not participate if it is possible to do so. In addition to free riding, other key problems for supply-management programs include cheating and inability to prevent outside entry.

Cheating on Supply Management: Any successful supply-management program raises price above producers' marginal costs of production, creating an incentive to expand production beyond the producers' base allocation. Despite the required reporting of individual production records, we believe that production would be expanded in excess of what the proponents of the program envision. Excess production would come from groups of producers who would seek and likely receive exemption based upon the type of milk they produced (e.g., organic) or their geographic region (e.g., milk deficit regions). Any exemptions granted in the legislation would create a class of free riders. Transshipments between producers above quota to those below quota would also be incentivized, creating overall expansion to near the maximum quota level.

Impacts on Imports: Outside entry created by supply management will be mainly from imports. Imports of dairy products into the U.S. are highly variable and responsive to market conditions. Imports constituted about two percent of the total supply of milk to the U.S. in 2007 and 2008. Imports of dairy products into the U.S. are regulated by a complex system of tariff-rate quotas, with additional protections provided in some cases by what are known as Safeguard Triggers. If, through supply management, U.S. prices rise above average levels for the rest of the world, marketers have incentives to redirect dairy products to the U.S. Quota levels for most products and most major importers did not bind in 2007 or 2008, meaning that imports can increase at the lower first-tier tariff rates. Further, given the complex array of dairy products and country-specific and product-specific quota levels, there are many opportunities for international arbitrage to circumvent quotas that might otherwise limit imports. We believe it is unquestionable that imports of dairy products to the U.S. will increase under a supply-management program that succeeds in raising dairy-product prices in the U.S. above world levels.

Impacts on U.S. Exports: Exports of U.S. dairy products have increased substantially in recent years. In 2007 and 2008 the U.S. exported 3.6 percent of its milk production on a fats basis and 12.7 percent on a nonfat solids basis. If through supply management, the U.S. succeeds in raising the domestic price for dairy products above world levels, U.S. marketers will be (a) unable to export at prices

commensurate with domestic levels and (b) unwilling to export at lower prices (in the absence of any export subsidies). Thus, supply management will reduce U.S. exports, meaning more production will be directed to the domestic market under supply management.

Reduced Exports and Increased Imports will reduce the Domestic Price of Milk: Each percentage increase in the supply of dairy products to the U.S. market from reduced exports and increased imports will reduce the U.S. raw milk price by about two percent. Notably, the economic analyses of the MAF programs that have been conducted do not incorporate international trade impacts. Fundamental forces of arbitrage through imports of dairy products into the U.S. and exports from the U.S. will seek to equalize U.S. prices to those in the rest of the world with due allowance for transportation costs. The only real forces restraining this arbitrage are the controls on imports, which, as we noted, may not be particularly effective.

Pure Price Stability is Probably Not a Realistic Goal: Under price stabilization the U.S. price would be held relatively constant, above the price of the rest of the world some times and below it at others. We don't believe this can be accomplished. Although controls on imports *may* enable U.S. prices to rise somewhat above world levels, U.S. marketers will have incentive to export production whenever U.S. prices fall below world levels, and, unlike with imports, there are no real barriers to exports.

Perverse Incentives Created by the Plan: We believe the plan as envisioned creates various perverse incentives. Due to the MAF applying to the entire production of producers who exceed their base, an incentive is created to (i) dump milk to avoid exceeding the base by a small amount (whether it is legal to do so or not); (ii) expand production in each period up to the maximum increment allowed to avoid sacrificing growth in base that is potentially valuable; and (iii) undertake any expansion beyond the allotted base on a large scale because the MAF per cwt. of expansion is continuously decreasing in the volume of the expansion—i.e., the MAF paid on the existing base is spread across an ever increasing volume the larger the expansion.

Nontransferable Base Incentivizes Inefficient Production: When a quota is proposed to apply to production, economists almost always recommend that the quota be transferrable, so that the most efficient producers can acquire quota and less efficient producers can sell it, insuring that output is produced efficiently. Nontransferable quota will incentivize less efficient producers to remain in business. Overtime this will hurt the overall competitiveness of the U.S in the world market.

Conclusion and Recommendations: Although a supply-management program in the U.S. dairy industry has the potential to improve farm prices, there are many barriers to successful implementation of a program. For the most part these barriers have not been considered adequately in the discussions to date regarding the

proposed programs. The cumulative impact of the various considerations we have discussed is that supply of milk and dairy products to the U.S. market may be considerably greater than projected, either through increased imports, reduced exports, and/or greater domestic production than the MAF plans envision. Each additional percent of supply will reduce the producer price by about two percent. The cumulative effect is that the periodic increases in base envisioned by the plans' proponents would not be realized if price goals were to be preserved; alternatively the price goals themselves would have to be sacrificed or adjusted downward.

We recommend that the industry proceed with caution and, in particular, conduct a thorough investigation of the impacts of the program on exports and imports and of a program's ability to succeed in light of these impacts. We further recommend that what we consider to be some of the proposed program's perverse incentive effects be evaluated for their likely impacts on the program's success and whether the program can and should be modified to minimize these effects.