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Determinants of dairy farmers' participation in the Milk Income Loss Contract program

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ABSTRACT

The Milk Income Loss Contract (MILC) program is a counter-cyclical income support program that was designed to provide price support to dairy farmers. Since inception of MILC, it has been argued that the program is inefficient and rewards inefficiency by keeping high-cost, small dairy farms in business. Using farm-level data and the probit estimation method, we investigated the factors that affect a farmer's decision to participate in the MILC program. Participation in the MILC program was positively correlated with the farmer's educational attainment, participation in the organic certification cost share subsidy program, off-farm work by spouses, and financial recordkeeping. Consistent with theory, participation in the MILC program is negatively correlated with the price of milk. Finally, contrary to the established narrative of large dairy producers, medium-sized dairy farms are more likely than large farms to participate in the MILC program.
Key words: milk income loss contract (MILC) payments, organic certification subsidy, farm size, financial recordkeeping

INTRODUCTION

The 2002 Farm Security and Rural Investment Act (2002 Farm Bill) initiated the counter-cyclical dairy income support program known as the Milk Income Loss Contract (**MILC**) program. The MILC program was designed to provide price supports to dairy farmers when milk prices fell below a target level for the Boston Federal Milk Marketing Order (**FMMO**) class I price. To receive program payments, a dairy farmer must earn a nonfarm, adjusted gross income of less than $500,000 (Chite, 2007). Payments are only eligible for up to 2.4 million pounds of milk (1.1 million kg) produced within the fiscal year 2005. The MILC program was renewed in the 2008 Farm Bill and the limit was increased to 2.985 million pounds (1.36 million kg). However, the limit decreases to 2.4 million pounds in fiscal year 2012. Enrolled dairy farmers receive MILC payments if the market price of milk falls below the target level. Since its inception, the MILC program has paid approximately $3.5 billion in total payments to US dairy farmers (Figure 1).

The primary elements of the MILC program consist of the following 2 parameters. First, the target price [$16.94 per hundredweight (**cwt**)] of milk is compared with the monthly Boston class I price. When the price of class 1 milk drops below $16.94/cwt, a premium is paid to bring it up to that minimum price. Because class 1 milk represents about 50% of the milk sold, the actual price floor fluctuates plus or minus $0.50 around the targeted price floor for the blend price of $13.69. If the Boston class I price is less than the target price, then all producers are eligible to receive a deficiency payment of 45% of the difference. Additionally, the target price is increased if feed prices exceed a base level ($7.35/cwt). The feed price is based on the cost of a standard dairy ration, referred to as the National Average Dairy Feed Cost (see Dairy Policy Analysis Alliance, 2010 or visit http://future.aae.wisc.edu/ for more information). Second, producers receive payment on no more than 2.4 million pounds (or 1.1 million kg) of milk marketed in any fiscal year (October–September, see Table 1). Once enrolled, the producer cannot withdraw from the program and then re-enroll during the same fiscal year.

Timing issues exist related to the payment date. Consider Table 1, which illustrates the MILC payments for 2005. Milk prices fell below the target level in June, but actual payments were not made at that time. At the end of June, the initial payment estimate was calculated as 45% of the spread between actual and target prices. The actual payment rate was not calculated until the end of the following month when the National Agricultural Statistics Services (**NASS**) released figures for the National Average Dairy Feed Ration Costs. Actual payments to the farmers were then made in August after 2 mo of above-target prices.

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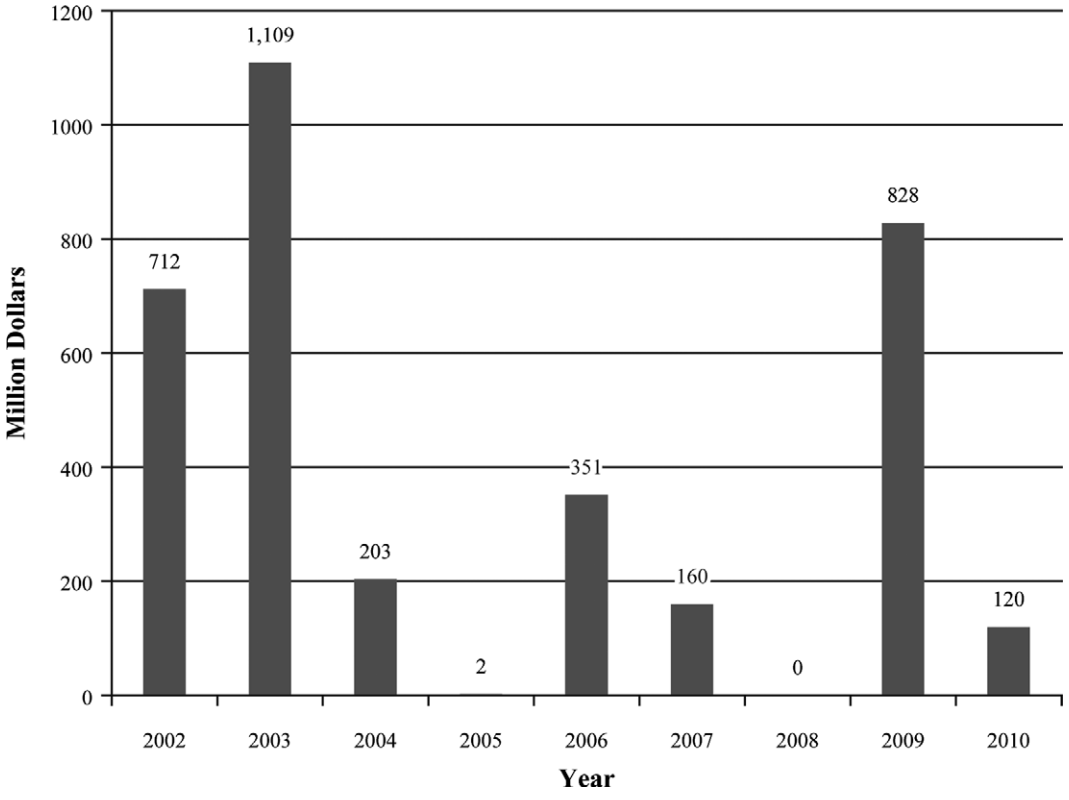

Figure 1. Total payments under the Milk Income Loss Contract program. Source: http://future.aae.wisc.edu/.

Although the MILC program imposes a production limit on milk eligible for payment during the fiscal year (October–September), it also allows each producer to select the month to initiate payments during the fiscal year (Chite, 2007; Jesse et al., 2008). It has been argued that, given a chance to participate in federal programs like MILC, virtually all dairy producers would participate. However, data from the 2005 Agricultural Resource Management Survey (**ARMS**) shows that 58% of producers, averaging 7,815,427 pounds (3.5 million kg) of milk production, did not participate in the MILC program. Since the program's inception, it has been argued by critics that the MILC program is itself inefficient and that it further rewards inefficiency by keeping high-cost, small dairy farms in business. In particular, large dairy producers have expressed concerns that MILC payments have negatively affected their farm income (Jesse et al., 2008). The MILC program has also been criticized for extending the length of low price periods and shifting the responsibilities of supply adjustment to large dairy farmers (Jesse et al., 2008).

The MILC program has received relatively little attention in the academic literature. Two primary factors explain the paucity of research in this area. First, scarce data are available to research this issue. Second, the dairy industry is regionally concentrated in Midwest states such as Minnesota and Wisconsin, Northeast states such as Vermont, New York, and Pennsylvania, along with some large dairy farms in California, which has led to state-level or regional studies with some observations but none specifically on the MILC program. With more than half of dairy operations not participating in the MILC program (ARMS, 2005) and average production over 2 times the production limit for MILC payments, a question arises: What factors affect dairy farmers' participation in the MILC program? Thus, the objective of this study was to investigate factors that affect dairy farmers' decision to enroll in the MILC program.

Literature on the determinants of participation in various dairy farm programs is scant; however, substantial relevant literature exists on the topic of MILC as a whole. In the early stages of the MILC program, Gould and Hackney (2003) concluded that given the seasonality in milk prices and production limits, large dairy farms might time their annual enrollment in the program to maximize the expected level of MILC payments. Jesse (2005) criticized the configuration of the MILC program and indicated that it is detrimental to the dairy industry in the long term. Herndon et al. (2005) examined the effect of the MILC program on milk production levels in 20 states. Using monthly data