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Farm Safety Net: Subsidized Savings Account for U.S. Farmers

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Abstract

A subsidized savings accounts program is being considered by USDA's Risk Management Agency to provide an income safety net to farmers. We argue that savings accounts would complement federal crop insurance program and other private risk management strategies that farmers routinely adopt to minimize income risk and hence offer a better safety net.

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Farm Safety Net: Subsidized Savings Accounts for U.S. Farmers

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Low commodity prices, variable farm incomes, and the declining number of farms in recent years have brought the issue of safety net back into policy discussion. A subsidized savings accounts program is being considered by USDA's Risk Management Agency (RMA) to complement other publicly supported risk management programs and to provide an income safety net to farmers. Subsidized savings accounts would enable farmers to build a cash reserve and manage their income flows. By depositing income into accounts during years of high net farm income, farmers could build a fund to draw on during years of low income. There are several ways in which government can subsidize a savings account. The major ones that are being discussed include tax deferrals, bonus interest rates, and government matching. Savings accounts, as a safety net program, would be beneficial to farmers for reducing income risks by cross subsidizing the bad years with the good years' returns. The subsidized savings accounts would add to the array of publicly supported risk management and safety net programs that are available to farmers. The purpose of this paper is to assess whether a subsidized savings accounts program can provide a farm income safety net in the presence of crop insurance and other market-based risk management tools.

This paper is organized as follows. First, we discuss the meaning of 'farm safety net', the kinds of risks that farmers face, and the strategies they use to minimize those risks. Second, we discuss the role of savings in mitigating income risk, and the relationship between savings and other risk management strategies. Third, we review the current subsidized savings programs and

discuss their potential to provide a farm safety net.

1. What is Farm Safety Net?

Many in the agricultural community have identified the need to provide a flexible safety net for supporting producer income in times of adverse economic conditions. However, there is no consensus on what constitutes a 'safety net' or how to achieve it. For economists, a safety net is a policy that ensures a minimum income, consumption, or wage level, which would provide farmers protection against production and market risks (Gundersen, et al., 2000). In a recent Farm Foundation Report on the 2002 Farm Bill, a farm safety net is defined as a public policy to assure farmers of at least minimal economic security in the face of uncertain markets and forces of nature (Tweeten, 2002). For political decision makers, on the other hand, the safety net concept may imply safeguarding average income on the farm.

A farm safety net policy can be comprised of one or more public programs directed at supporting commodity price, yields, revenue, or whole farm gross or net income. Such programs as crop yield or revenue insurance, whole-farm insurance, direct payments, price supports, disaster assistance, stock accumulation, export subsidies, and the conservation reserve program are often used to provide a safety net to farmers.

Farming is an inherently risky business. Farmers face numerous risks in agriculture, including production risk, price or market risk, institutional risk, human or personal risk, and financial risk (Harwood et al., 1997). Up until the 1996 farm bill, commodity support programs provided direct payments to participating farmers when market prices fell below a target price set by the government. The 1996 farm bill reduced the government's intervention in agricultural

markets and shifted the focus toward greater emphasis on market-based policies. This fundamental change shifted a greater portion of the risk from the government to the producer.

Farmers adopt a portfolio of strategies to manage production, price, and income risks. Responses to farm risk often involve market insurance and self-insurance. Market insurance includes several intra-year risk management tools such as crop yield and revenue insurance, whole farm insurance, futures and options contracts, and contract sales. Self-insurance, on the other hand, includes inter-year risk management tools such as inter-temporal savings, borrowings, and consumption substitution possibilities. These tools, used separately or in combination, provide farmers with a measure of protection from uncertain prices and yield. In this paper, however, we focus on inter-year savings as a tool to smooth farm income, assuming all other intra-year risk management options are also available to farmers.

2. Savings as a Safety Net

Savings and borrowing are ways to mitigate consumption and income risks. In an economy with well developed capital markets, farmers' ability to save and borrow is a significant factor in reducing income risk. For example, studies have shown that individuals manage their savings and investment to minimize the adverse effects of variable income (Deaton 1991 and 1992). The 1999 USDA's Agricultural Resource Management Study (ARMS) survey indicates that 35 percent of farm families participated in tax-deferred retirement savings plans (Mishra and Morehart, 2002).

Savings are desirable for several reasons: *First*, savings can generate a positive return. *Second,* savings guard against unexpected income shocks. *Third*, savings can be used to

purchase farm equipment and machines. *Fourth*, savings can be used to maintain a certain standard of living even through retirement. Farm households are vulnerable to various risks and savings can be used to complement other risk mitigating strategies. However, the objectives of insurance and savings could be conflicting in the short-run because protecting against large crop losses may involve hefty premium costs which would reduce the funds available for savings (Gollier 1994).

Farmers often have difficulty maintaining a reserve of cash from one year to the next. In years of good farm income, farmers make capital investments to improve the production process and also to reduce taxes. During bad years, cash flow often becomes an issue. Continued large government outlays for disaster assistance and other commodity programs are viewed by some as providing a disincentive to save (see Mishra and Morehart, 2002). Policies that create incentives to self-insure or save in order to stabilize income are being considered. Several savings account programs have been proposed that allow farmers to save during "good years" and draw on the reserves in "bad years". These programs could help farm operators manage their year-to-year income variability. Subsidized savings accounts could provide an alternative for farmers who might otherwise not save enough.

The paper by Mishra and Morehart (2002) offers two valuable insights for developing subsidized savings accounts. *First*, farm households have their money invested in a diversified portfolio, including savings. This would suggest that programs with incentives to save more for "rainy days" may attract more farmers. *Second*, the results of the study, which are based on USDA's ARMS survey, show that farm households that received government payments saved less on average than those who did not receive government payments. Authors contend that

government payments become a substitute for savings, or that participation in government programs decreases the amount of perceived risk. Also, farm households that bought business insurance have on average a lower propensity to save compared with the uninsured. On the other hand, the study finds that farm households that purchased business insurance save more for unexpected income shocks. This suggests complex interaction among different risk management tools that needs to be considered while designing and implementing a savings account program.

Even though subsidized savings accounts will likely increase savings, the effectiveness of the additional savings in smoothing income would depend on its impact on farmers' use of other risk management tools. The incentive structure of a savings account would determine if savings account program complement or substitute for the existing safety net programs. For example, an incentive structure that requires savings accounts be exhausted before crop insurance indemnity payments are made would reduce participation in crop insurance and may also reduce the amount available for saving.

Makki and Miranda (2000) examined optimal farm income risk management in a multi-year stochastic framework. In their prototype model, a typical farm household has the option to either self insure through savings, or to purchase market insurance, either a yield/revenue insurance contract or an options/futures contract, to reduce income risk. The study analyzes the potential tradeoffs and complementarities that exist between self-insurance strategies involving savings and borrowing and market insurance. Several findings of this study have implications for subsidized savings accounts and are summarized below.

First, the choices of self-insurance and market insurance contracts are interrelated and applied simultaneously. These two alternative means of reducing farming risk are both

substitutes and complements. From the view point of resource allocation, they are substitutes because they compete for the same resources. From the point of view of reducing overall risk, on the other hand, they complement each other because each strategy by itself cannot eliminate all risks. Since farmers use a multitude of strategies to cope with risk, all risk management options available to farm households should be considered while designing and implementing risk management and safety net policies.

Second, the study suggests that farm households weigh the options of either self insuring through savings or by purchasing market insurance against the risk of loss and cost of reducing that risk. The amount of self-insurance and the willingness to pay for market insurance are sensitive to price and yield variance, interest rates, and the degree of risk aversion. Public safety-net policy should aim to improve savings opportunities for farm households and lower the transactions costs of market insurance.

Finally, simulation results indicate that farmers' willingness to pay for market insurance decreases with the level of wealth, while the ability to pay for self-insurance increases with the level of wealth. The size of operation permits larger farmers to pursue private risk management options including savings. Smaller farmers, on the other hand, may not have enough net income to accumulate savings.

Small farmers receive relatively little from the current set of commodity programs (Gundersen, et al., 2000). In 1999, small farms, which account for 76 percent of farms nationwide with gross sales of $50,000 or less, received only 14 percent of the payments, while large farms, which account for 7 percent of farms nationwide with gross sales of $250,000 or more, received nearly half of the farm payments (GAO, 2001). Also, farms specializing in cash

grains and/or oilseeds (account for 20 percent of all farms) received over 60 percent of government payments in 1998 (ERS Briefing Room). Given the heterogeneity of the U.S. agriculture, it may be necessary to design and implement a safety net program that is more equitable and would support limited resource farmers (Kuhn and Offutt, 1999). In addition, the commodity program benefits are determined annually and change periodically as a result of policy decisions. Savings account could be used to reach small and limited resource farmers, as well as dairy, livestock, and specialty crop producers. Savings account would be a valuable tool in addressing income risk management and safety net in a multi-year framework.

3. Subsidized Savings Accounts

In this section, we examine possible programs for promoting savings and analyze whether the programs would offer a safety net to farmers. In particular, we examine two savings accounts programs that have been discussed as possible additions to the risk management programs. They are the Canadian Net Income Stabilization Account (NISA) and the Farm and Ranch Risk Management Account (FARRM). The Canadian NISA is the only program that has been in operation for several years and may offer some lessons for the proposed savings accounts program in the United States.

Net Income Stabilization Account

In order to understand the potential role of federally subsidized savings accounts, we first turn to the Canadian NISA program. The NISA program is designed to help farmers achieve long term income stability on an individual basis. NISA, which is a voluntary program, has been operating since 1991. In addition to NISA, Canadian farmers have access to other risk management tools

including crop insurance.

NISA is part of Canada's farm safety net framework, designed to provide individual level assistance to achieve income stabilization of farmers, irrespective of the commodities they produce. The NISA program subsidizes producers who build savings accounts in high revenue years, by matching producers' contributions up to a preset limit. In years of low income, producers are allowed to draw from their savings accounts. NISA operates using two funds: Fund 1 holds all the deposits made by the farmers and Fund 2 holds the government matching contributions and all accumulated interest on both funds.

Under the NISA program, participating farmers contribute up to 3 percent of each year's eligible net sales (ENS), and contributions are matched dollar for dollar by the government. Farmers are also allowed to make additional non-matched contributions of up to 20 percent of ENS each year. The maximum sales eligible for matching is limited to C$250,000 per year per farming entity. Qualifying commodities include all primary agricultural commodities except dairy, poultry, and eggs, which are covered by separate income support programs. Farmers are allowed to accumulate a maximum of 150 percent of the previous 5-year average of eligible sales. Farmers' contributions are taxed the year they are deposited, while government contributions are taxed when they are withdrawn. Accounts earn market interest rates. In addition, farmers' contributions receive an additional 3 percent annual return from the government.

Withdrawals from the account are allowed when net farm income falls below the average of the last 5 years or below a minimum household income level. Annual withdrawals are limited to an amount necessary to equate current-year farm income with the previous 5-year average, or

equate the current year's income with the minimum household income threshold, which is set at C$20,000 per individual or C$35,000 per family. A farmer who retires or wishes to discontinue participation in the program may withdraw the entire balance, including government contributions.

In 1999, over 80 percent of Canadian farmers participated in the NISA program. Since the inception of the NISA program, participants have deposited more than C$2.6 billion in their NISA accounts, while governments have made deposits of more than C$2.9 billion (Table 1). Participants withdrew a total of C$3.1 billion from funds 1 and 2 since the first year of NISA. This left a total of C$3.0 billion in NISA accounts in 1999 (Table 1).

In 1998, there were approximately 142,500 active participants in the NISA program, with a total of C$3.09 billion held in accounts. During that year, 97,839 producers were eligible for withdrawals totaling C$1.5 billion. Of this number, 52, 899 (54 percent) producers withdrew a total of C$700 million (44 percent) from their NISA accounts. An analysis of the withdrawal patterns shows that a considerable number of NISA participants are choosing not to access their accounts, even when they experienced lower incomes. One in eight participants either chose not to access their accounts or accessed their accounts only once in 6 years, although funds were available for withdrawal in each year.

Analysis of the 1998 data also shows that nearly 40 percent of NISA participants have account balances that make up less than 30 percent of their average five year margin. A majority of these participants have taken withdrawals in almost all years in which they have participated in the program. Many with limited income opportunities from both farm and off-farm sources, use NISA withdrawals as a form of income supplement. For these participants, the NISA funds

never accumulate enough to effectively serve as an income stabilization mechanism.

Coble (1995) analyzed the potential effects of a Canadian-style income stabilization program for a representative 500-acre farm in Iowa. The study simulates two alternative NISA scenarios over a 30 year period. In the first scenario, the farmer contributes 2 percent of eligible sales annually, plus any net revenue in excess of 140 percent of the last 5-year average net revenue. In the second scenario, the farmers' contribution is limited to the government matching level of 2 percent of eligible sales. In both scenarios, contributions occur only in years of positive income. The simulation exercise offers several interesting results. In scenario one, for example, the farmer contributes more than twice as much to the NISA account as in scenario two. The simulated results also indicate that the variation in annul income is reduced by 44 and 21 percent, respectively, under the high and low contribution scenarios. The study shows that the probability of NISA accounts being drawn down to zero in any one year, leaving the farmer with no risk protection, was 20 percent in scenario one and 31 percent in scenario two.

The simulation results indicate that little risk protection is provided to farmers in early years of participation, because of smaller account balances. As the number of participation years increases, there would be larger account balances and, therefore, greater risk protection to farmers. Another important finding of this study is that NISA type programs would cost less per acre than the deficiency payments program. The simulation results show that for a representative farm in Iowa, cost per acre of a NISA-type program would have been $2.91 during 1991 through 1994 period. This compares with an average per acre deficiency payment of $47.46 and $23.73 for corn and soybeans, respectively, during the same period.

The advantages of NISA include income risk protection and coverage of a wide range of

farming activities with little or no market distortion. The NISA program covers net farm income and hence all crops and livestock are included.

The Canadian NISA program, however, has not achieved its intended objectives. Some reviews of the program indicate that farmers have not taken full advantage of the risk protection potential of the NISA program. For example, farmers in Canada are unwilling to withdraw from the NISA accounts even when their income falls. In recent years, shortfalls in farm revenues triggered withdrawals from the NISA accounts, but less than half of eligible farmers withdrew funds. The program offers incentives to build up savings but not to use it as an income stabilization tool in times of low farm revenues. In a survey of Canadian farmers on the role of NISA program, nearly two-thirds of farmers agreed that NISA is means to save for retirement (Economic and Policy Analysis Directorate, 2000).

Some of the criticisms of the NISA program are that a producer with no income to accumulate in an account receives no help, and that a producer's fund may be exhausted quickly in case of several successive bad years. The program is also criticized for being misused for retirement savings rather than as an income safety net program.

Farm and Ranch Risk Management Account

The proposed Farm and Ranch Risk Management (FARRM) account program would subsidize farm and ranch operators to build a cash reserve to be available as a safety net. By depositing income into accounts during years of high net farm income, farmers could build a fund to draw on during low income years. Federal income taxes on eligible contributions would be deferred until withdrawal. Under this program, farmers would take a Federal income tax deduction for deposits of no more than 20 percent of eligible net farm income. Deposits would be made into

interest bearing accounts at approved financial institutions, and interest earnings would be distributed and taxable to the farmer annually. Withdrawals from principal would be at the farmer's discretion (no price or income triggers for withdrawal), and taxable in the year withdrawn. Deposits could stay in the account for up to 5 years, with new amounts added on a first-in first-out basis. Deposits not withdrawn after 5 years would incur a 10% penalty.

Monke and Durst (1999) examined the feasibility of FARRM accounts as a potential risk management tool. Using 1994 Internal Revenue Service (IRS) data, they estimate that nearly a million farmers would be eligible to contribute as much as $2.8 billion to FARRM accounts each year. Farm sole proprietors account for over two-thirds of eligible participants and three-fourths of potential contributions. IRS data also indicate that about 80 percent of all farmers could contribute less than $1,000. If the eligibility for contributions is based on positive net farm income, then much of the benefit of FARRM accounts would go to operators of large farms. The five year window for building reserves combined with generally low level of net farm income may limit the likelihood of farmers accumulating adequate reserves to self-insure against income risk.

FARRM accounts are unlikely to affect farmers' decisions on acreage allocations or on levels of inputs and, therefore, are not market distorting. This program is simple and relatively inexpensive to the government. Another advantage is that FARRM accounts would be available to all farmers, even those for whom insurance is not available currently such as livestock, dairy, poultry, and fishery farmers. Tax deferred savings plans might be attractive to farmers who use self-insurance to manage risks. The major weaknesses of the FARRM program is the time required to build-up the account. A producer who is poor, has participated in the program only a

few years, or who incurs several low revenue years in a row may receive little or no risk protection from the program.

4. Will the subsidized savings accounts offer much needed safety net to farmers?

Subsidized savings accounts would likely play a significant role in farm risk management. Savings accounts would enable farm households to spread the effects of income shocks across time, thereby offering an attractive alternative to the use of standard harvest-time price and yield risk contracts. The savings accounts would complement federal crop insurance program and other private risk management strategies that farmers routinely adopt to minimize yield, price, and/or income risks. Savings accounts would become more attractive relative to crop insurance if the government were to match the producer contribution, provide bonus interest rates, and offer tax concessions.

Savings incentives could help farmers manage risks and create a self-insurance safety net. However, the level of safety net may depend on the farmers' ability to accumulate reserves in the account. The experience of NISA also suggests that a subsidized savings accounts would provide greatest benefits to economically successful large commercial farmers who would be able to build cash reserves, while limited resource farmers may not be able to build safety net reserves.

Subsidized savings accounts could offer a safety net to farmers in a non-trade distorting manner. The cost of such a program may be less than the current set of commodity programs in offering comparable income stabilization.

Farmers already use savings and borrowing to stabilize income and expenditures, without

subsidies and tax advantages. Farmers are likely to participate in a subsidized savings accounts program to take advantage of the benefits (tax deferrals, bonus interest rates, and/or government matching contributions). Both NISA and FARRM programs need modifications before they are successfully implemented in the U.S. Whether the program is utilized as a farm safety net or as a retirement fund depends on the incentive structures and rules for withdrawals.

The Economic Research Service (ERS) is currently involved in conducting research that will assist the RMA to determine the feasibility and potential effects of subsidized individual savings accounts to producers. ERS is analyzing producer eligibility, contributions, and government costs of various subsidized savings account structures. Research is also conducted on Canada's experience with the subsidized NISA program, including the relationship of NISA to other economic safety net programs and the relevance of the program to United States producers. The ERS research on the NISA program includes access and compilation of the Canadian NISA program database, analysis of the structure and performance of the program, and a formal econometric analysis of farmers response to the program. Furthermore, the research will identify ways to improve the effectiveness of a NISA-type program in the U.S. within the context of existing risk management and other safety net programs

Table 1--Net Income Stabilization (NISA) Program: Summary of financial statistics for the 1990-2000 Stabilization years (C$ Million)

Year	Participant deposit	Government Contribution	Withdrawals		Accumulated Account Balance
			Fund 1[a]	Fund 2[b]	
1990	200	408	172	378	59
1991	163	218	57	132	262
1992	169	131	57	80	443
1993	173	149	40	62	699
1994	298	305	52	87	1,218
1995	405	444	68	118	1,949
1996	341	314	84	150	2,461
1997	369	349	166	313	2,838
1998	370	440	237	470	3,094
1999	205	187	203	343	3,071
2000[c]	245				3,525
Total (1990-99)	2,692	2,944	1,135	2,131	3,071

a. Fund 1 holds all the deposits made by the farmers;
b. Fund 2 holds the government matching contributions and all accumulated interest on both funds;
c. Data for year 2000 is preliminary and incomplete.

Source: NISA Review Consultation Document, 2001.

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