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Economic Impact of a Targeted Marketing Loan Program on North Dakota

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Economic Impact of a Targeted Marketing Loan Program on North Dakota

David M. Saxowsky, Dr. Won Koo, and Richard Taylor[1]

The debate over the 1995 farm bill has led to numerous proposals, each of which must strike a balance between two conflicting goals -- reducing government expenditures and providing support to agriculture producers. One proposal is to replace the current system of deficiency payments with a marketing loan program with loans limited to $125,000 for program crops (primarily wheat, barley and corn in North Dakota) for each farmer. This report analyzes that proposal by comparing it to selected alternatives -- continuation of the current program, Senator Lugar's proposal of reducing the target price 3% each year for the next 5 years, and increasing the amount of normal flexible acres by 10% (e.g., from 15% to 25% for wheat).

Summary of Results

A targeted marketing loan program would reduce North Dakota net farm income for the next 5 years by 5.4% compared to continuing the current program. However, this impact will be borne by about 20% of the largest crop farmers. The remaining crop farmers would not have their revenue affected by this program. A targeted marketing loan program would cause a 9.1% decrease in crop land values over the next 8 years in comparison to continuing the current program. This alternative would generate an annual savings equivalent to 9% of current farm program costs over the next 3 to 5 years.

Senator Lugar's proposal to reduce the target price 3% each year for the next 5 years would lead to a 18.7% reduction in North Dakota net farm income, but this would be borne by all producers of program crops. This proposal would decrease crop land values by 46% in comparison to continuing the current program. Lugar's proposal would begin with an annual savings of 22% but increase to 40% relative to current program costs.

Increasing the amount of flexible acres by 10% would decrease North Dakota farm government program benefits by approximately 11.7%; however, like Lugar's proposal, the impact will be borne by all crop farmers. In comparison to a targeted marketing loan (which would decrease government benefits by 10.9% from current levels), increasing flexible acres would lead to slightly larger decreases in net farm income and crop land values.

Most proposals for the 1995 farm bill will lead to reduced land values and reduced farm equity. These reductions will likely diminish the availability of capital for farm operators. This consequence suggests that any proposal to alter the farm program should be accompanied by a review of lending regulations so that agricultural lending practices emphasize cash flow projections and place less reliance on the borrower's equity.

The additional flexibility under both the targeted marketing loan and increased flex acres is an opportunity for producers to consider

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alternative crops. Appendix B presents a list of crops produced in each region of North Dakota according to net return per acre without deficiency payments. This table reports only one year's data which may not represent long term results.

For Additional Information

The analysis was conducted by modifying an existing model. The methodology is described in Koo, et al. "Analysis of Alternative Farm Programs," Department of Agricultural Economics, North Dakota State University, May 10, 1995. Consequently, the results in this report can be compared with the analysis of alternatives reported in that document. Similarly, the figures which illustrate results of the analysis also can be compared.

Assumptions and Comments About a Targeted Marketing Loan Program

Several of the principal features of a targeted marketing loan program are listed below. This program is described as targeted because the benefits will be available only for a portion of the production of program crops. The remaining portion of production would not be eligible for program benefits. The features of the proposal which target the benefits are briefly described in the following points.

1. Each farm operator and crop share landlord would be eligible for a marketing loan on program commodities presently covered by target prices.

   A marketing loan program allows commodity prices to drop as far as necessary to "clear" the market.

2. The loan rate would be at the existing target price for each commodity.

3. Total loans per operator or owner shall not exceed $125,000 annually.

   This restriction targets the program benefits by rendering a portion of the production of the largest producers ineligible for participation; even the largest producers would be eligible to participate in the program for a portion of their production.

4. Production beyond that covered by the loan limit would be sold, fed, or stored and placed under loan in a subsequent year when disasters reduce yield.

   This flexibility means that only operators whose average annual production of program crop exceeds $125,000 would be impacted by targeting the program benefits.

5. If market prices are less than the loan rate, a certificate would be used to redeem the loan and would be valued at the difference between the loan rate and the market price as periodically determined at the county level.

   Average market prices in this analysis were projected by FAPRI.

6. Producers would determine their own acreage use and plantings.

   This feature allows producers to select alternative crops; changes in the crop mix will depend on the relative profitability of program and nonprogram crops.

7. Recipients of a marketing loan must have less than $100,000 annual nonfarm income.

This restriction again targets the benefits of the program. The impact of this limitation is difficult to estimate due to lack of nonfarm income data. It appears, however, that it will have minimal impact in North Dakota (Table 1). Another potential difficulty may be defining nonfarm income; for example, is return from a agriculture processing cooperative nonfarm income?

Although the data reveal no average nonfarm income in excess of $100,000, it is possible that a small number of operations could be affected by this limitation.

Table 1. Average Total Nonfarm Income for Operators Participating in the North Dakota Farm and Ranch Business Management Program, 1993

	All Farms	Low 20%*	High 20%*
Red River Valley	$11,178	$14,329	$8,198
North Central	10,913	14,541	7,561
South Central	10,359	14,282	8,572
West	10,397	17,282	8,045
Overall State	10,480	14,459	7,034

* Sorted by Net Farm Income

8. Any person eligible for a marketing loan could receive such only as one entity, and could not receive loan benefits as a part of any other entity.

This limitation further targets the program benefits by prohibiting individuals from receiving program benefits for more than one farm business.

The North Dakota State CFSA office estimated that between 100 and 200 farms in the state (out of approximately 33,000) currently qualify for more than one payment limitation. Due to this low number, this eligibility restriction would have a minimal impact on North Dakota's agriculture industry.

The CFSA office also indicated that there are approximately 450 married couples in North Dakota wherein each spouse qualifies for a payment limitation. It is not clear whether the proposed limitation also would apply to married couples. If the limitation is intended to apply to married couples, the number of affected operations (450 of more than 30,000) also should have a minimal impact on the state's overall agriculture industry.

Questions

1. What economic impact would a targeted marketing loan program have on North Dakota producers?

Net farm income for the average farmer would drop 5.4% over the next 5 years (Table 2 and Figure 1) but because the benefits of the program are targeted, this reduction will primarily affect the state's largest farms (Appendix A). These operations, which represent about 20% of North Dakota crop producers, would

Table 2. Net Farm Income Per Average Farm

	Base	Targeted Marketing Loan	Senator Lugar's
	$	$	$
1995	58385	58385	58673
1996	59185	55892	54550
1997	58817	55137	50902
1998	57335	53903	46398
1999	55992	53133	42205
2000	55851	53691	38998
2001	55994	54405	33632
2002	56579	53635	36013
2003	54795	53542	38383
5-yr avg (1996-2000)	57436	54351	46611
% change from base		5.4	18.8
8-yr avg (1996-2003)	56819	54167	42635
% change from base		4.7	25.0

experience more than a 15% decrease in net farm income (Table 3 and Figure 2). The remaining North Dakota crop producers (approximately 80%) would receive the same benefits as if the current program was continued without change.

Among the large farms which would be affected by a targeted marketing loan program (that is, those operations which annually produce more than $125,000 of program crops), the central regions of the state would experience the greatest impact (Table 4). The incidence of impact reflects the availability of nonprogram alternatives in the west and Red River regions of the state.

Although a targeted marketing loan affects only 20% of the state producers, the decrease in net farm income is expected to reduce crop land values by 9.1% over the next 8 years (Tables 5 and 6, Figures 3 and 4).

2. Had a targeted marketing loan program been in place in 1994, how would total federal commodity support expenditures in North Dakota have compared to the existing program?

The difference between the aggregate net farm income for the base and for the targeted marketing loan is the annual reduction in government costs (Table 5). The projected annual savings would be about $44 million for three years, and thereafter the savings would decrease. An annual savings of $44 million represents approximately a 9.7% decrease in government program costs.

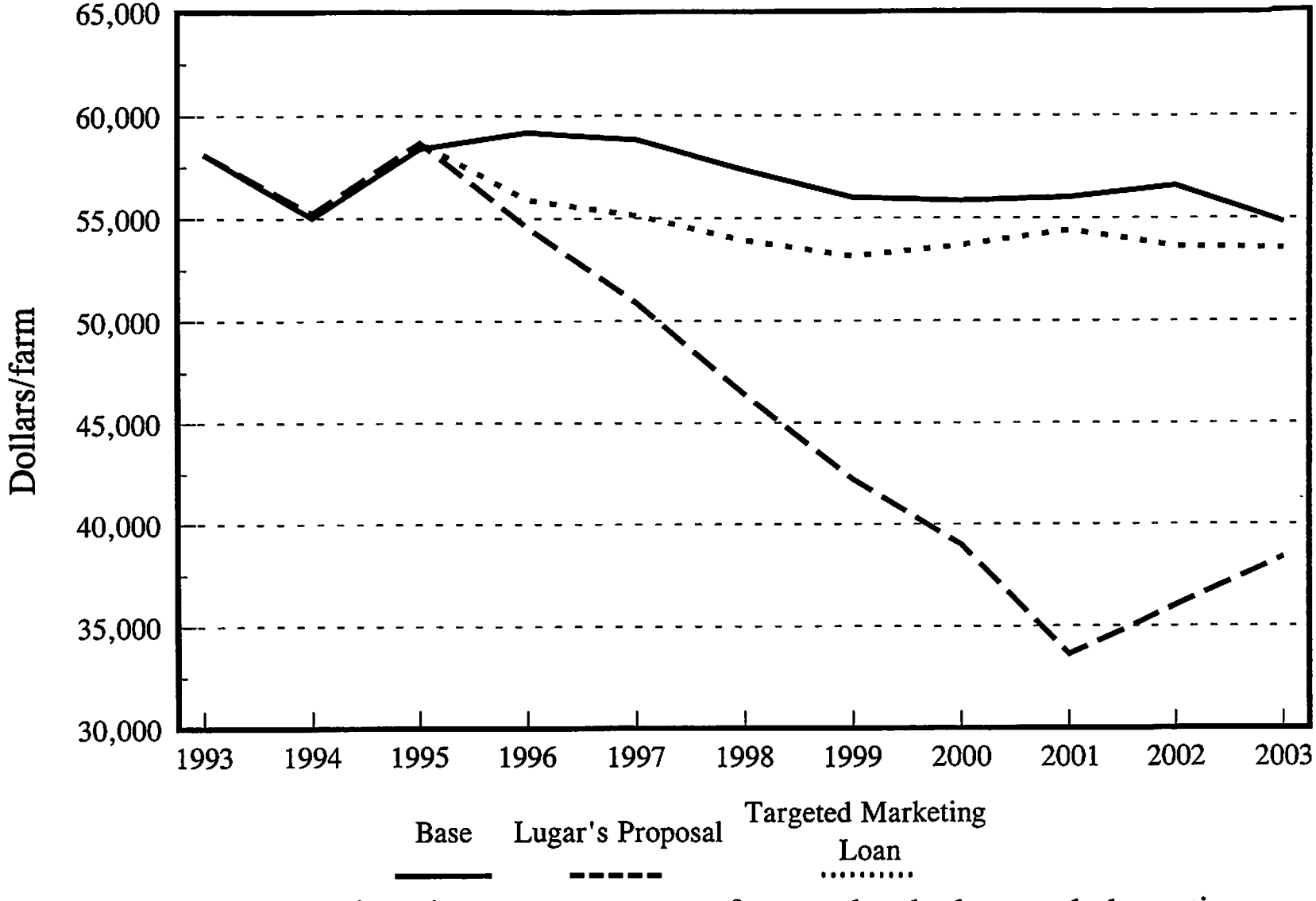

Figure 1. Net farm income per average farm under the base and alternative farm program scenarios

Table 3. Net Farm Income Per Large Farm*

	Base	Targeted Marketing Loan	Senator Lugar's
	$	$	$
1995	88777	88777	89209
1996	88547	76144	83373
1997	90022	74045	78394
1998	88513	72737	72461
1999	87272	73543	67012
2000	86975	75869	62887
2001	88353	78366	55525
2002	90150	80993	60005
2003	88166	80886	64204
5-yr avg (1996-2000)	88266	74468	72825
% change from base		15.6	17.5
8-yr avg (1996-2003)	88500	76573	67983
% change from base		13.5	23.2

* A large farm is defined as an operation which annually produces more than $125,000 of program crops.

3. What economic impact would a 3% per year reduction in target prices for each of the next five years (Senator Lugar's proposal) have on state producers?

Net farm income would drop more than 18% over 5 years and 25% in 8 years (Tables 2 and 5; Figures 1 and 2). Crop land values (Table 6) would drop more than 46% below base projections during the next 8 years (this would be more than a 50% decrease from current crop land values). Lugar's proposal would cause land values to drop 37% lower than if a targeted marketing loan was implemented.

A second important difference between a targeted marketing loan and Senator Lugar's proposal is the incident of the impact. A targeted marketing loan is expected to have no impact on net farm income for 80% of the state's producers; Lugar's proposal would affect all producers enrolled in the government program.

Again, the difference between the aggregate net farm income for the base and for Lugar's proposal is the annual reduction in government costs (Table 5). The projected annual savings would be about $102 million for several years, but annual savings would continue to increase until 2001 at a level of $292 million. An annual savings of $185 million represents approximately a 40% decrease in government program costs.

4. What economic impact would increasing the normal flexible acres (triple base) by 10% have on the state's producers?

Continuing the current program but increasing the normal flexible acres by 10% has the effect of lowering the government program

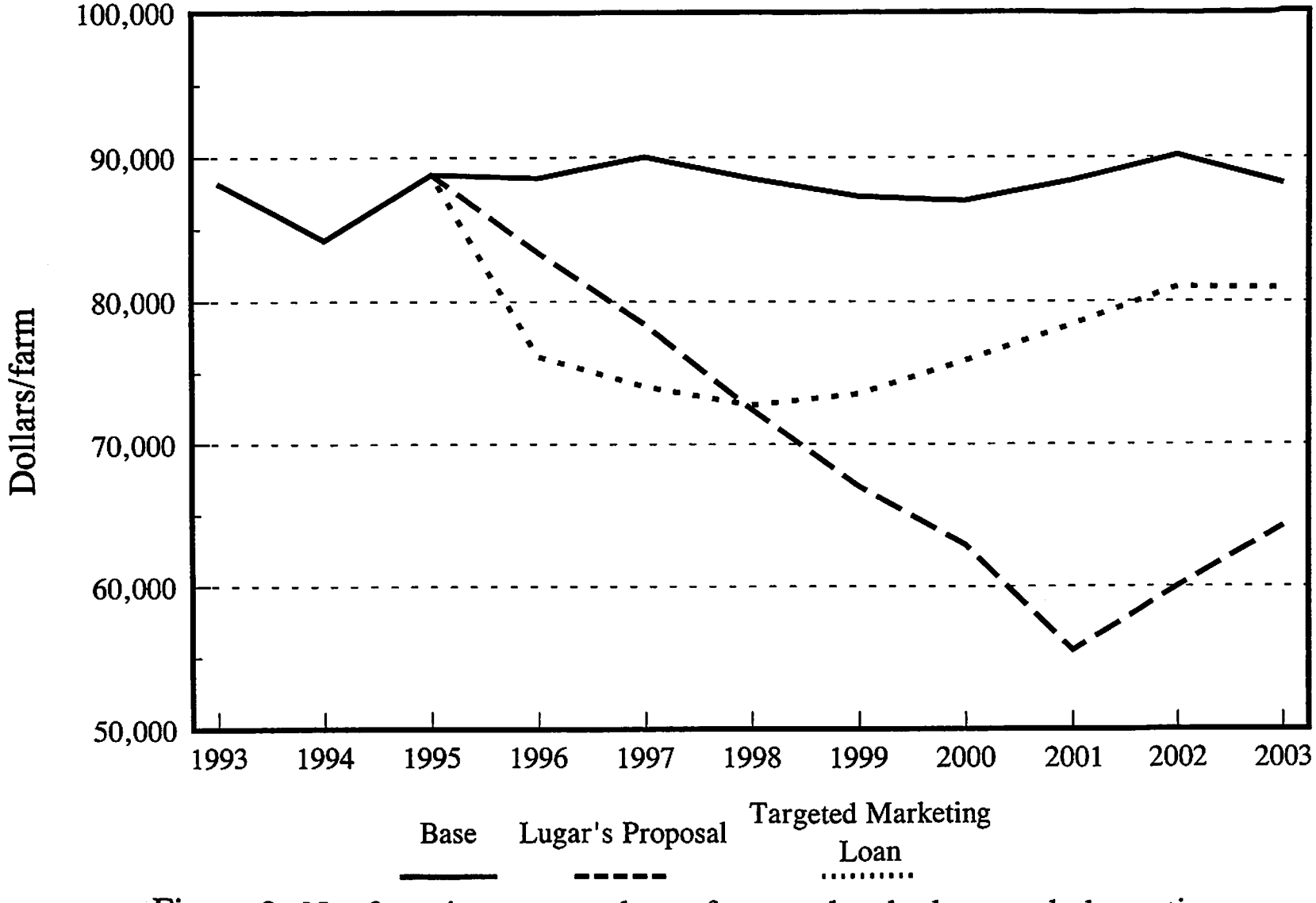

Figure 2. Net farm income per large farm under the base and alternative farm program scenarios

Table 4. Net Farm Income Per Large Farm by Region

Year	Red River Valley		North Central		South Central		West	
	Base	Targeted Marketing Loan	Base	Targeted Marketing Loan	Base	Targeted Marketing Loan	Base	Targeted Marketing Loan
	$	$	$	$	$	$	$	$
1995	111449	111449	104810	104810	50471	50471	88380	88380
1996	116334	105783	98422	76628	52105	37620	87329	84547
1997	117729	104429	104518	77238	51894	32478	85950	82038
1998	116684	103371	103998	77138	49515	30456	83857	79984
1999	114818	103083	104129	79726	47774	32046	82368	79319
2000	114996	105388	105496	84520	45094	33489	82317	80083
2001	116853	108329	106459	86932	48544	38396	81560	79809
2002	117436	109607	106057	87801	57174	48054	79934	78515
2003	119382	113401	106705	90947	46958	40661	79620	78537
5-yr avg (1996-2000)	116112	104411	103313	79050	49276	33218	84364	81194
% change from base		10.1		23.5		32.6		3.8
8-yr avg (1996-2003)	116779	106674	104473	82616	49882	36650	82867	80354
% change from base		8.7		20.9		26.5		3.0

Table 5. Aggregate Net Farm Income

	Base	Targeted Marketing Loan	Senator Lugar's
	$	$	$
	-----	million dollars	-----
1995	766	766	769
1996	775	733	715
1997	770	723	667
1998	751	707	609
1999	734	697	555
2000	732	704	513
2001	734	713	442
2002	742	702	473
2003	718	701	502
5-yr avg (1996-2000)	752	713	612
% change from base		5.3	18.7
8-yr avg (1996-2003)	745	710	560
% change from base		4.6	24.8

Table 6. Average Price of Cropland

	Base	Targeted Marketing Loan	Senator Lugar's
	$	$	$
1995	427	427	428
1996	434	434	436
1997	439	427	424
1998	441	418	400
1999	436	405	365
2000	422	388	319
2001	406	373	271
2002	394	363	230
2003	385	350	208
5-yr avg (1996-2000)	434	414	389
% change from base		4.6	10.5
8-yr avg (1996-2003)	420	395	332
% change from base		5.9	21.0
% change from base by 2003		9.1	46.0

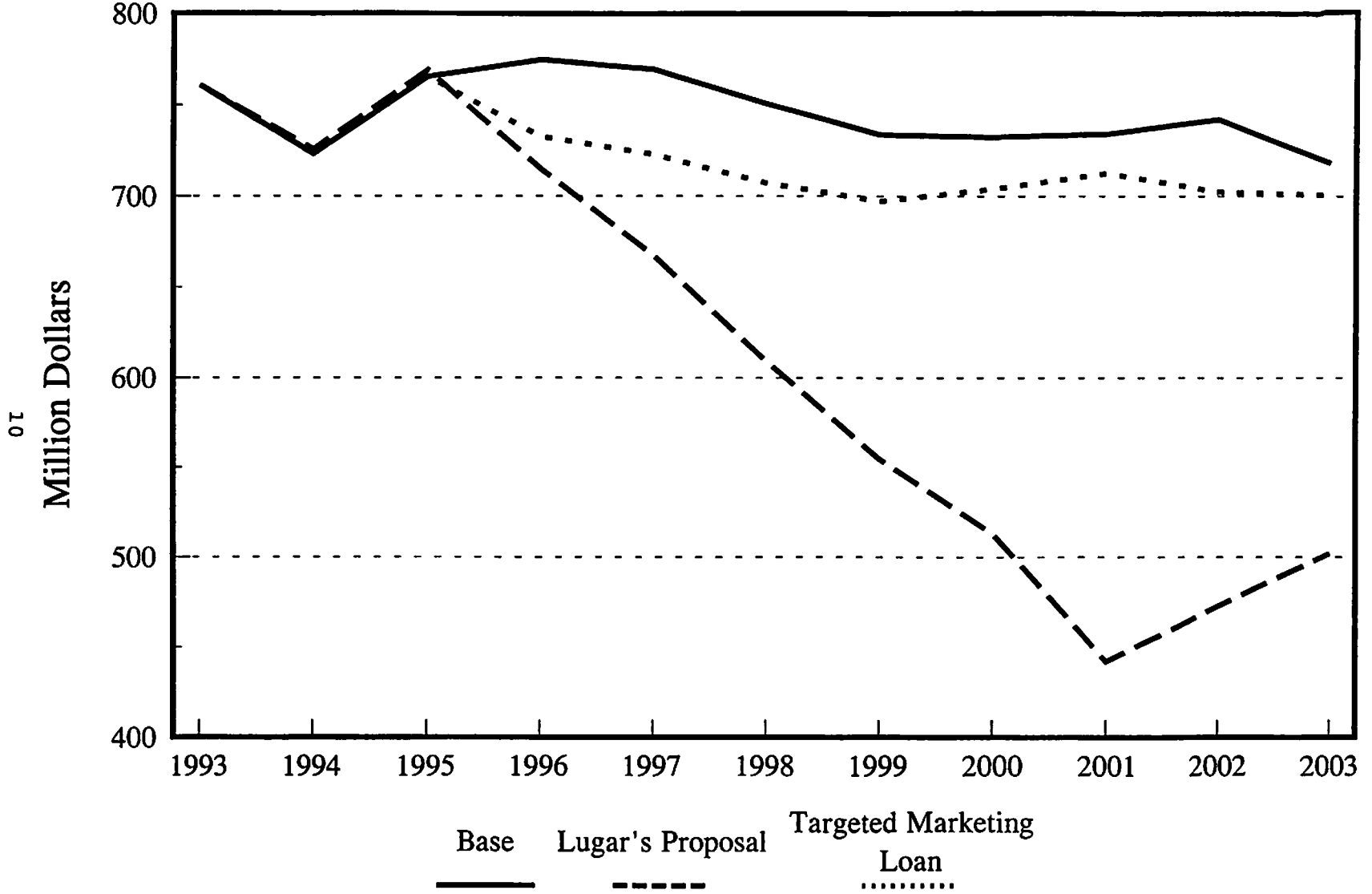

Figure 3. Aggregate net farm income under the base and alternative farm program scenarios

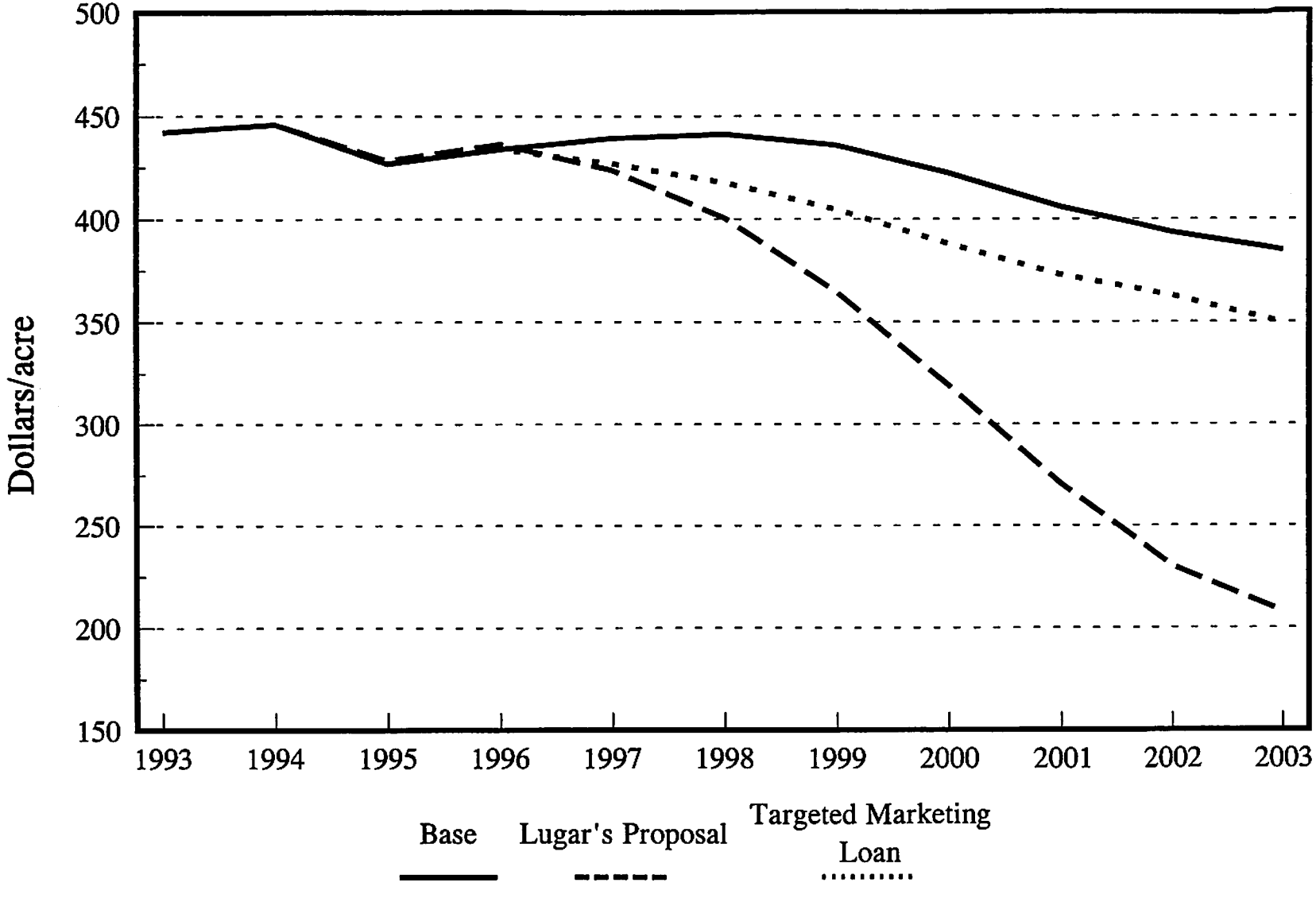

Figure 4. Average prices of cropland under the base and alternative farm program scenarios

benefits by approximately 11.7% (.1/.85). This is a slightly greater savings than projected for a targeted marketing loan (10.9%, Appendix A). Therefore, one would expect aggregate net farm income and land values to be less than the levels projected for a targeted marketing loan program.

However, an important difference between increasing the normal flexible acres and implementing a targeted marketing loan also is the incidence of the impact. Increasing the normal flexible acres impacts all producers of program crops whereas a targeted marketing loan primarily impacts the largest 20% of farmers in the government program.

Additional Considerations

Cost Savings The savings to the government resulting from a targeted marketing loan or a 10% increase in normal flexible acres probably are inadequate based on recent Congressional discussions.

Lending Practices A decrease in land values will lead to a greater erosion of farm equity, especially for indebted farm operators. Consequently, operators dependent on borrowed funds for operating will likely experience an adverse impact on the availability of operating funds.

Therefore, any proposed changes in the farm program that will lead to diminished land prices (and that describes most proposals at this time) should be accompanied by a review of federal agriculture lending laws. The review should emphasize whether current lending regulations adequately allow lenders to shift from lending primarily on the basis of the borrowers' equity to placing greater importance on the borrower's projected cash flow. Without such a change in lending laws, farm operating capital may dwindle and thus further adversely impact production agriculture.

Changing Crops One feature of both the targeted marketing loan and increased flexible acres is the opportunity for farmers to produce alternative crops. The question is whether North Dakota producers have profitable alternatives. Based on the 1994 data from the North Dakota Farm and Ranch Business Management program, there are some alternatives (Appendix B).

Some of the most profitable alternatives, however, may not be available due to control within the market (e.g., sugar beet allotments), limited market (that is, increased production of the crop may dramatically reduce prices), or restrictions in the government program (e.g., cannot plant edible beans on normal flexible acres). Likewise, in some cases, the next most profitable alternative may be the same commodity but without government support (e.g., spring wheat in the west region).

Risk Management through Crop Insurance Despite the efforts of the past few years, any changes in the farm program that increase producer risk should be accompanied by another review of the current crop insurance to assess its adequacy.

Analysis of Magnitude and Incident of a Targeted Marketing Loan

Limiting the availability of a marketing loan to $125,000 of program crops per farm primarily impacts large farms. At $4/bushel for wheat and a state average yield of 31 bushels per acre (NASS, 1993), production beyond 1,008 acres of wheat per farmer would not be eligible for program benefits (assuming the farmer produces no other program crops). Thus few farms with less than 1,000 acres of cropland would be impacted by the $125,000 limitation. Similarly, not all farms with more than 1,000 acres of cropland would encounter the limitation.

The 1992 Census of U.S. Agriculture reports farm size by cropland acreage. In North Dakota, 27,804 farms include some cropland. Of these, 6,390 farms had more than 1,000 acres of cropland. These farms each operate on the average 1,664 acres of cropland or about half the cropland in the state (10.632 million acres/19.2 million acres = 55.4%).

Not all farms with more than 1,000 acres of cropland produce more than $125,000 of program crops due to lower yields or fewer acres in program crops. At most, 5,200 farms with more than 1,000 acres of cropland would be affected by a targeted marketing loan. These affected farms operate 8.65 million acres of cropland in North Dakota. Approximately 22,000 North Dakota farms with cropland would not be impacted by a targeted marketing loan.

Assumptions used in the analysis:
yields do not vary by farm size;
crop mix does not vary by farm size; and
projected commodity prices are not impacted by the program.

The analysis divides the state into 4 regions. Appendix Table 1 reports the percent of program crops produced on the large farms (more than 1,000 crop land acres) that exceeds the $125,000 value. It also indicates the portion of program crops produced by large farms, and the portion of total program crop production that would exceed the $125,000 limit. Overall, 10.9% of the program crops produced in the state would not be eligible for government program benefits.

Appendix Table 1. Percent of Total Program Crop Production in North Dakota Exceeding $125,000, by Region and State.

	Percent of Program Crops on Large Farms that Exceed $125,000	Percent of Program Crops Produced by All Large Farms	Percent of Program Crops Exceeding $125,000 Limit
Red River Valley	32.6	67.5	22
North Central	15.8	57.1	9
South Central	13.5	56.8	8
West	8.7	40.7	4
State			10.9

An example can illustrate the impact on the state. Annual government program benefits have averaged about $500 million since 1990. A 10.9% reduction in benefits would decrease net farm revenue by $54.5 million from the current level. If this decrease is spread over the 8.65 million acres operated by affected farms, the impact per cropland acre for the affected farms would be $6.30.

Appendix B

Appendix Table 2. Net Return per Acre Without Deficiency Payment Based on 1994 North Dakota Farm and Ranch Business Management Program, by Region.

Red River Valley		North Central		South Central		West	
Crop	Dollars	Crop	Dollars	Crop	Dollars	Crop	Dollars
Sugar Beets owned	415.68	Conf. Sunflowers owned	72.47	Conf. Sunflowers owned	91.69	Spring Wheat owned	44.56
Sugar Beets cash rent	329.52	Durum owned	72.22	Conf. Sunflowers cash	77.08	Spring Wheat cash rent	38.98
Pinto Beans owned	123.39	Alfalfa owned	67.18	Millet owned	65.05	Alfalfa owned	33.40
Corn share rent	91.26	Durum cash rent	61.37	Soybeans owned	57.35	Alfalfa cash rent	30.63
Alfalfa cash rent	79.92	Conf. Sunflowers cash	52.82	Sunflowers owned	51.5	Barley owned	16.24
Alfalfa owned	75.13	Durum share rent	48.30	Corn owned	50.83	Oats owned	12.44
Corn owned	68.01	Alfalfa cash rent	45.65	Alfalfa cash rent	41.72	Barley cash rent	12.10
Corn cash rent	65.03	Pinto Beans cash rent	34.52	Crambe owned	38.97	Corn Silage cash rent	7.24
Pinto Beans cash rent	62.55	Sunflowers owned	31.98	Durum owned	35.35	Corn Silage owned	5.94
Navy Beans cash rent	53.35	Canola share rent	30.84	Flax on owned	35.28		
Sunflowers owned	42.44	Spring Wheat owned	30.37	Alfalfa owned	32.32		
Conf. Sunflowers cash	39.85	Sunflowers cash rent	29.30	Conf. Sunflowers share	30.98		
Navy Beans owned	39.63	Canola cash rent	28.79	Millet share rent	27.54		
Sunflowers share rent	37.90	Canola owned	27.66	Sunflowers cash rent	24.11		
Barley owned	31.82	Barley owned	26.63	Spring Wheat owned	23.87		
Soybeans owned	29.44	Spring Wheat cash rent	24.81	Sunflowers share rent	18.48		
Spring Wheat share rent	24.81	Sunflowers share rent	22.20	Barley owned	17.87		
Spring Wheat owned	21.27	Corn Silage owned	21.09	Millet cash rent	16.61		
Soybeans share rent	17.42	Spring Wheat share rent	18.72	Soybeans cash rent	15.15		
Sunflowers cash rent	15.08	Barley cash rent	16.80	Corn cash rent	12.34		
Soybeans cash rent	11.51	Flax on owned	13.83	Durum share rent	10.90		
Barley share rent	7.44	Alfalfa share rent	13.47	Spring Wheat share rent	9.09		
Spring Wheat cash rent	2.85	Barley share rent	12.95	Alfalfa share rent	8.91		
		Oats share rent	6.62	Spring Wheat cash rent	8.14		
		Flax share rent	6.12	Barley cash rent	7.91		
		Oats cash rent	4.30	Barley share rent	5.88		
				Corn Silage owned	4.60		
				Durum cash rent	3.62		
				Oats cash rent	1.86		
				Oats owned	0.37		